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OF

PSYCHOLOGY AND PHILOSOPHY

I.—THE LOGICAL FOUNDATIONS OF MATHEMATICS.

BY R. B. HALDANE.

IN a paper which appeared in MIND for April last Mr. Bertrand Russell reviewed an Address which I delivered in October, 1907, as President for the year of the Aristotelian Society.[1] In the course of this review he restated certain propositions, of much importance both in mathematics and in logic, with which he had associated his name in his book on the *Principles of Mathematics*. About that book I should like to make an observation at the outset. I am not competent to judge of its value as a contribution to the science of pure mathematics. But it does not require much technical knowledge in a general reader to enable him to appreciate the breadth of treatment and firmness of grasp which the book displays. It is of rare occurrence in the domain of abstract thought to find any one possessed at once of the philosophical and the mathematical attainments which are Mr. Russell's, and it is very satisfactory that such a writer should have arisen in these islands, where this kind of combination of gifts is still less frequent than it is abroad.

It is about the main thesis of the book that I wish to say something in this paper, and as this thesis lay at the root of what Mr. Russell said in his review in MIND of my address, I will first restate the point of controversy. I had said that modern developments in logical theory, particularly those relating to the meaning of the conception or category of

[1] Published by the Society under the title *The Methods of Modern Logicians and the Conception of Infinity*.

Quantity, had a close bearing on such branches of mathematics as the differential calculus. I instanced the confusion of thought which led Leibnitz and some of his contemporaries to treat infinitesimals as minute discrete quanta, the magnitude of which might be disregarded, just as that of a grain of sand might be disregarded when estimating the size of the ocean. Such procedure and its consequences meant, as D'Alembert long ago said, the ruin of the geometrical exactness of the calculus. It is fatal to pretend that a circle is a polygon with very small sides. I cited illustrations from recent text-books which showed that ideas of this nature are still the occasion of much unnecessary obscurity in the minds both of the teacher and the taught. Quantity is a highly general conception which lies (so I stated, but I do not think that Mr. Russell agrees) at the very root of mathematical reasoning, and quantity has two aspects, each of which implies and is inseparable, both in thought and in existence, from the other, continuity and discretion. The conceptions of number and magnitude, which arise out of the judgment of quantity, are therefore at once both continuous and discrete in their implications. Had this been realised at the beginning, the so-called infinitesimal calculus might from the first have been consistently treated as a science not of infinitesimals but of rates. But even when the advance has been made of regarding quantity as presenting the aspect of continuous change care is requisite before the term "rate" is employed. For I pointed out that when we speak of "rate," we generally have in our minds a complex idea of which the elements are time and change, but that (so I went on in the Address) "where one uniform rate is compared with another, without regard to absolute values, as in dy/dx, the symbol of the differential co-efficient, the idea of time may be left out of the question, and the comparison may be made through that of the simultaneous changes of the two rates themselves. Thus the ratio of the simultaneous increments of any two variables which increase at constant rates, does in fact perform a double office, representing not only the ratio of their changes, but also that of their rates of change, which will of course be constant. Just because of this characteristic, the rates at which the quantities may be changing are not affected when their values become zero, and may pass from *plus* to *minus* quantities. The equation $^0/_0 = a$, thus has a meaning; a may be the ratio, not only of quantities or of their increments, but also of these rates of increase, and therefore, when applied to the so-called increments with which the differential calculus deals, a must in-

dicate the ratio of the rates of change of their increments as they pass through the zero point of their value. dy/dx is thus a symbol which represents, not actual or separable minute quantities, but simultaneous rates of change in x and a function of x. Apart from their relation to each other, dy and dx are non-existent; they have reality only as factors or moments in a relationship which belongs to the continuous aspect of quantity. Thus it is only as symbolising rates of change in certain aspects of magnitude that curves may be treated as though made up of lines. The relationship of the differential co-efficients of such magnitudes is to be conceived as existing, neither *before* they disappear, nor *after*, but as the relation *with which* they disappear. In virtue of the principle of continuity the vanishing magnitudes still retain the ratio which characterises their relative rates of change. It follows that the transition from the function of a variable to its differential must be regarded as no difference by so much, but as a reduction of the finite function to the qualitative relation of its quantitative factors. What is present is in reality only the qualitative relation of quantitative *principia*, which, as being *principia*, are factors but not quanta. Thus we get rid of the 'beyond' of the false infinite of quantity taken as discrete. It is by grasping truths of this class that we rid ourselves of the limitations by which the science of quantity, assumed to possess a merely discrete character, is confused, and gain the free use of the great instrument of analysis which the genius of Newton and Leibnitz has placed within our grasp. In the notions themselves which underlie the calculus there is nothing particularly abstruse. It is the confusion of ideas which logically imply different categories that makes this branch of mathematics seem a mystery. . . . The whole subject is only one more illustration of the truth that there is a borderland between science and metaphysics, the boundaries of which require much more exact study and ascertainment than they have hitherto received. It is the province of modern logic to embrace this region within its survey, and to set up warning posts for men of science and for metaphysicians alike."

In his paper Mr. Russell began by saying that while the criticisms made on Leibnitz were "fully justified, no such criticisms are applicable to the present theory of the Calculus". Certain citations from recent text-books which I made, described, he declared, "very accurately the state of mind of an intelligent pupil who is being taught the calculus by an ignorant teacher". He went on to regret that I had apparently not come across any of the recognised modern

authorities on the subject, such as the *Encyclopädie der Mathematischen Wissenschaften*, or Dini's *Theorie der Functionen einer veränderlichen reellen Grösse*. If I had I would have learned "that the whole subject proceeds without ever introducing the infinitesimal, that the fundamental conception is that of a *limit*, and that a limit is something quite different from what non-mathematicians suppose it to be".

I am glad to learn from Mr. Russell that the "infinitesimal" has already been more completely discarded from current text-books than some scrutiny had led me to imagine it had been. I am at one with him in thinking that, on logical grounds, the idea and its expression must be banned. And before going further I will apologise to Mr. Russell if any expression of mine has led him to think that I professed to speak with adequate knowledge of what is going on in the world of mathematics. I had endeavoured to make it clear that it is only with the logical foundation of mathematics, these problems of epistemology on which Mr. Russell has himself written so remarkably, that I am occupied. Such problems are deeply concerned with topics such as those of infinitesimals and limits, and modern logic cannot and does not affect to pass them by. Indeed Mr. Russell himself does not grow weary of insisting to mathematicians that their science cannot be put on its legs, or kept there, without the aid of such a system of symbolic logic as he sets forth in the first volume of his *Principles*. The method which owed something to Boole and more to Schröder, was "transformed by the new methods of Professor Peano," and "has now become not only absolutely essential to every philosophical logician, but also necessary for the comprehension of mathematics generally, and even for the successful practice of certain branches of mathematics". Into the region of purely mathematical controversies there are not a great many who are capable of following Mr. Russell, and I am certainly outside of the number. He has the reputation in Great Britain and on the Continent of being one of the most ingenious and acute of the modern exponents of mathematical theory. But when, some time ago, I began to read with humility of spirit the first and less technical volume of his treatise on the principles of mathematics, I found, among much that was admirable, some things that seemed to me more dubious. Mr. Russell is a philosopher as well as a mathematician, and it is as a philosopher that he addresses the public in much of this volume. He begins by saying that in his work he has two main objects. The first is "the proof that all pure mathematics deals exclusively with concepts definable in

terms of a very small number of fundamental logical concepts, and that all its propositions are deducible from a very small number of fundamental logical principles". The second is "the explanation of the fundamental concepts which mathematics accepts as indefinable. This is a purely philosophical task." He goes on: "On fundamental questions of philosophy my position, in all its chief features, is derived from Mr. G. E. Moore. I have accepted from him the non-existential nature of propositions (except such as happen to assert existence) and their independence of any knowing mind; also the pluralism which regards the world, both that of existents, and that of entities, as composed of an infinite number of mutually independent entities with relations which are ultimate, and not reducible to adjectives of their terms or of the whole which these compose. Before learning these views from him, I found myself completely unable to construct any philosophy of arithmetic, whereas their acceptance brought about an immediate liberation from a large number of difficulties which I believe to be otherwise insuperable. The doctrines just mentioned are, in my opinion, quite indispensable to any even tolerably satisfactory philosophy of mathematics, as I hope the following pages will show."

Later on I shall have something to say about the meaning of the new departure in mathematical method to which Mr. Russell alludes. It is mainly concerned with the substitution, as the basis of mathematical analysis, of the notion of pure arithmetic, and especially of a continuum in which quantity is arithmetised, for the group of notions connected with the measurement of extensive magnitude. Now I doubt (and I think that the question is strictly one of logic) whether these latter notions were ever fully or clearly stated in the current mathematical text-books. If not, it may well be that the foundations of the higher mathematical analysis could have been made secure without abandoning them. But assuming that the new way of looking at quantity introduced by writers such as Dedekind and Cantor is to be regarded as final, the question is whether it required such a foundation as Mr. Russell insists on assigning to it in symbolic logic. I doubt the necessity for erecting the new structure on any such foundation, and I doubt whether on balance it possesses any advantage. The new and powerful methods of Dedekind and Cantor, as explained by these authors, seem to me to be the outcome of a general view of quantity which, if wider than that current in mathematical text-books, has been over and over again insisted on, not only

by Idealists from the days of Kant onwards, but by recent writers on logic as free from the terrible taint of Hegelianism as is Sigwart. Moreover the symbolic logic of Mr. Russell seeks to exhibit all pure mathematics as an absolutely deductive process, dealing with concepts definable in terms of certain specified fundamental logical principles. For him pure mathematics is concerned with what, following Peano, he calls *implications*. Cases in which propositions, like those of Euclid, relate to actual space, for him belong to applied or mixed mathematics. Now it is no doubt possible to take the forms of inference and divest them of all that makes them resemble the processes of our actual knowledge of reality. By a treatment which, if highly abstract is at least systematic, we can construct a logical calculus which will work, at all events for many purposes, and there is no reason to doubt that much of mathematical reasoning may be exhibited in this form. Such a method may be on occasions of real value, both in logic and in mathematics. But it has some awkward limitations. Its advocates have, in the first place, to show us how, on their principles, conclusions which are got by mere deduction from premises can ever carry us beyond these premises. Again the tendency of modern investigation is to confirm the opinion that the fashion in which we know does not admit of the representation, otherwise than for strictly limited purposes, of judgments by symbols that do not represent the processes on which these judgments are founded. For the more the process of judgment has been scanned, the more the majority of inquirers have been impressed with the impossibility of divesting it, even in its most abstract form, of an essential reference to reality. In the ordinary perceptive judgment this reference is explicit and direct. In other judgments, such as the hypothetical, it may be implicit or indirect. But turn and twist the process of judgment as we will, its subject seems to be always, explicitly or implicitly, some aspect of reality. Its process is the analysis of this aspect and, as inseparably bound up with such analysis, a synthesis with the subject in the judgment of the predicate thus analytically obtained, a synthesis which results in enlarged knowledge of the subject thus determined in further relations. The process is one of assigning what is determined as an element to its place in a system. Our universe of discourse is the aggregate of these systems. The postulate of knowledge is that each of these systems can be included in some further and more complete system towards which the necessity of thought impels it. The ultimate postulate of knowledge would seem to be a

final system which has nothing beyond it. In the concluding pages of the Address which Mr. Russell reviewed in MIND I observed that it is only on the basis of such a postulate that knowledge, and the progressive interpretation of reality which it sustains, are possible and intelligible. Every judgment affirms a necessity based on the reality of a final and all-comprehensive system, about which there can be no questioning, because it is itself related to nothing beyond, and all questioning falls within it. Its own relation to knowledge is, in other words, one not of necessity but of ultimate and final reality. As a corollary from this, just as the processes of human knowledge, including the distinction of what is felt or perceived from the predicates which we progressively incorporate with it, fall within the completed and self-contained system of intelligence thus finally postulated, so the system itself becomes real, not apart from, but only in and through these finite processes, outside which it would seem that we can attach no meaning to it. It is a mistake to try to find a gulf between infinity and the finite in which it is immanent. They are as little separable as are other concepts which mutually involve each other, such, for example, as continuity and discretion.

Mr. Russell of course rejects the existential view of the judgment, and with it the Aristotelian view of logical forms. The process of knowledge is highly complex, too complex to be capable of exhaustive reduction to the simple forms which Aristotle bequeathed to posterity. But if we are aiming at an accurate account of what we are actually doing when we are enlarging the field of knowledge, I think that Aristotle's analysis is much nearer to the facts than is the picture held up to us by Mr. Russell. Lotze in his *Logic* remarks (at the end of his note on the Logical Calculus, where he has been describing Boole's work): "How often have modern enterprises like these proclaimed the dawn of a wholly new epoch in logic, and the fall of the contemptible system of antiquity! I am convinced that if the ancient logic were to be really forgotten for some generations and then rediscovered by some fortunate thinker, it would be welcomed as a late discovery, after long search, of the natural march of thought, in the light of which we should find intelligible both the singularities and the real though limited relevancy of the forms of logical calculus with which we had made shift so far." But Mr. Russell may say that the difficulty of reconciling the most modern mathematical conceptions, such as those of series and limit, with the doctrines of Aristotle and Kant has

forced him to seek the solution in a new logical calculus. It is just here that I doubt whether he has done justice to these great teachers. I am not calling in question the immense advance in the field of mathematical method which he describes in his book. But I am going to suggest that this method does not require the special metaphysical and logical structure which he has built round it. I do not think that pure mathematics, even in its most abstract phases, is a mere process of deduction from general principles. On the contrary I believe it to be based on experience. I will presently assign reasons for thinking that even the barest process of counting is arrived at by abstraction from our consciousness of a succession in our acts of judgment, and that the genesis of number and series is disclosed by analysis to be the hypostatisation of our stream of mental states. Through the medium of certain fundamental conceptions we isolate in judgments which have perceptive and even intuitional reality as their subject, certain relations, and we do this just as truly when we apply the methods of Dedekind and Cantor, or of non-Euclidean and projective geometry, as we do when we count apples in a basket, or sketch a building. Here I find myself in direct conflict with Mr. Russell, and I am unfortunately compelled to be no less so over the fashion in which he employs his categories. When in his article in MIND he says that "the notion of a limit is, in fact, a purely ordinal notion, involving no reference to quantity whatever," he is assuming that the conception of quantity is no wider than that of what is measurable, and comes later than that of an ordered series. Many of the text-books of the calculus in effect say this, and I have been throughout ready to reproach them for it and should like to have done so in the good company of Mr. Russell. What I have to say is that if he had realised what is taught in these days by such writers on logic as, to take even two who differ as much on other points as do Sigwart and Bosanquet, he would have found that they agreed in rejecting the narrow view of quantity which he suggests as driving him to anti-idealist views about the meaning of judgment, and finally into symbolic logic. My strong impression is that there is nothing in the mathematical methods which he expounds that requires any other foundation than that on which these and other well-known logicians are substantially agreed. No doubt symbolic logic, particularly when elaborated and adapted to mathematics as Prof. Peano and Mr. Russell have done, may be of real service to mathematicians. But if the adaptation necessitates a total departure from the character and

form of the judgment and of inference generally, as we find these in experience, then the new system can claim no higher recognition than that of being a useful makeshift, and the natural tendency to get rid of it as a mere scaffolding will, in that case, inevitably make itself manifest. But because Mr. Russell takes what I must call a somewhat contracted and conventional view of the teaching of Idealism he insists that he must regard his metaphysical and logical system as the only one open to him. A little further on in his book than the passages which I have already quoted he says: "Idealists have tended more and more to regard all mathematics as dealing with mere appearance". Now this is a highly misleading statement, if it is intended to assert anything peculiar to mathematics. Kant himself, whose teaching on the subject is far from being the last word of Idealism, does not say so. Prof. Caird's two volumes dispose, I think, of this assertion even about Kant. Then Mr. Russell says that "not only the Aristotelian syllogistic theory, but also the modern doctrines of Symbolic Logic were either theoretically inadequate to mathematical reasoning, or at any rate required such artificial forms of statement that they could not be practically applied. In this fact lay the strength of the Kantian view, which asserted that mathematical reasoning is not strictly formal, but always uses intuitions, *i.e.*, the *a priori* knowledge of space and time. Thanks to the progress of Symbolic Logic, especially as treated by Professor Peano, this part of the Kantian philosophy is now capable of a final and irrevocable refutation." After stating that "by the help of ten principles of deduction, and ten other premises of a general logical nature" the whole of mathematics can be deduced, he adds, "The fact that all mathematics is Symbolic Logic is one of the greatest discoveries of our age; and when this fact has been established, the remainder of the principles of mathematics consists in the analysis of Symbolic Logic itself".

I have quoted Mr. Russell's words because it is important to be aware of the magnitude of the controversy and of the real issue which his book opens up. If he is right, the contribution which Kant is supposed to have made to the theory of mathematical truth was a huge blunder. But is Mr. Russell accurate in his statement of what Kant taught? People are apt to draw the hasty inference in their study of the *Critique of Pure Reason*, that the *Æsthetic*, a preliminary portion, contains all Kant had to say about mathematical truths. Because he finds that these truths are synthetic judgments *a priori* Kant begins by provisionally affirming

that space and time are pure forms of intuition which condition perception. Those who read him hurriedly conclude that therefore the foundation of mathematical inference is construction confined to the mere forms of space and time for its materials. In a sense Kant says so. But I think that Cohen's book on the foundations of the Infinitesimal Calculus which Mr. Russell cites largely in chapter xli. of his own work, has misled him about Kant. Kant is one of the most difficult authors to quote satisfactorily, for his method is to state a position and then to qualify it later on as he goes along. One has to read him backwards as well as forwards; the *Critique of Pure Reason*, for instance, is not really intelligible until one has read the *Critique of Judgment* which followed it. And this is especially true of the *Æsthetic*, and of his account of the so-called pure forms of space and time. They have no real existence, or even significance for knowledge, separately from what they derive through the schematisation of the categories, for the first time expounded in the *Analytic*. "In der That," he says in the section which deals with the schematism of the categories, "liegen unseren reinen sinnlichen Begriffen nicht Bilder der Gegenstände, sondern Schemate zum Grunde. Dem Begriffe von einem Triangel überhaupt würde gar kein Bild desselben jemals adäquat sein. Denn es würde die Allgemeinheit des Begriffs nicht erreichen, welche macht, dass dieser für alle, recht oder schiefwinklige, etc., gilt, sondern immer nur auf einen Theil dieser Sphäre eingeschränkt sein. Das Schema des Triangels kann niemals anderswo als in Gedanken existiren und bedeutet eine Regel der Synthesis der Einbildungskraft, in Ansehung reiner Gestalten im Raume." A page farther on (p. 172, Kirchmann's edition, Berlin, 1872) he says: "Das reine Bild aller Grössen (*quantorum*) vor dem äusseren Sinne ist der Raum, aller Gegenstände der Sinne aber überhaupt die Zeit. Das reine Schema der Grösse aber (*quantitatis*), als eines Begriffs des Verstandes, ist die Zahl, welche eine Vorstellung ist, die die successive Addition von Einem zu Einem (Gleichartigen) zusammenbefasst. Also ist die Zahl nichts Anderes, als die Einheit der Synthesis des Mannigfaltigen einer gleichartigen Anschauung überhaupt, dadurch, dass ich die Zeit selbst in der Apprehension der Anschauung erzeuge." Mr. Russell seems to me to overlook the real meaning and use attached by Kant to the forms of intuition. If he had considered what Caird and other recent commentators on Kant have brought to light about the relation of the Schema to Time in particular, he would have found that in the last of the sentences above quoted from Kant there is enunciated a prin-

ciple to which he fails to do justice.[1] For instance, at page 158 of his book he discusses the relation of quantity to number. He seems to suggest that until certain very recent developments in mathematics took place the conception of quantity had no place excepting as a logical derivative from some intuition of magnitude. But now, he declares, one school, that of Weierstrass, Dedekind and Cantor, have pointed out that, if irrational numbers are to be significantly employed as the measure of quantitative fractions, they must be defined without reference to quantity, and that in this way a new subject "which has added quite immeasurably to theoretical correctness," has been created, which is fatal to the Kantian theory of *a priori* intuitions as the basis of mathematics. Moreover, he adds, new branches of mathematics which deal neither with number nor with quantity have been invented, and "it has appeared that measurement—if this means the correlation with numbers of entities which are not numbers or aggregates—is not a prerogative of quantities," for some quantities cannot be measured, and some things which are not quantities can be measured. "The separation between number and quantity is thus complete. Each is wholly independent of the other. Quantity, moreover, has lost the mathematical importance which it used to possess, owing to the fact that most theorems concerning it can be generalised so as to become theorems concerning order. It would therefore be natural to discuss order before quantity." I have quoted Mr. Russell thus fully, though not for the purpose of criticising his mathematical reasoning. Were I competent I would not presume to do so in the case of a writer so eminent. But I am forced to point out that what he is dealing with is a problem, not of mathematics primarily, but of epistemology. Before we can express ourselves confidently about number and quantity we must be quite clear what we mean by them. Moreover the relationship to each other and to experience of the categories of thought, which he discusses almost as though the soil were virgin, is a very old problem. I have stated why I doubt whether he appreciates the teaching even of Kant on this branch of epistemology. But after Kant's time the matter was yet more thoroughly investigated. Mr. Russell often quotes Hegel—Hegel may or may not be out of date; there is progress backwards as well as forwards. But I notice that Mr. Russell's citations are from the small *Encyclopedia Logic*, which contains a mere outline, and that he makes

[1] See a recent monograph in which this is well worked out: *Vergleich der Methoden Kants und Hegels auf Grund ihrer Behandlung der Kategorie, der Quantität*, by J. M. O'Sullivan, Berlin, 1908.

little reference to the larger *Wissenschaft der Logik*, where the problems that arise out of the relation of logic to mathematical conceptions are fully discussed. Idealism in its varied forms, whether it is the idealism of Aristotle, of Kant, of Hegel or of so restrained a thinker as Mr. Bradley, asserts broadly that what we mean, when in every-day life we speak of reality, depends on distinctions which fall within knowledge and not without it. This principle separates the creed of Idealism from the metaphysical doctrine of Mr. Russell.

All teaching about concepts and judgments is and must be largely consequential, and cannot but be profoundly affected by any divergence in root principles. The idealists may be in danger of misinterpreting Mr. Russell. I am sure he is in danger of misinterpreting them. For those who think that the basis of reality is mind, even when they interpret mind as embracing the particulars of feeling not less than the universals of abstract thought, and deny that the one factor in individual reality exists apart from the other, or that either has a meaning excepting as abstracted from the entirety of self-consciousness, there is a duty which faces the inquirer at the outset. It is to criticise his categories. He must see what are the broad conceptions which are involved in the very texture, alike of the process of knowledge and of the objects which attain reality in that process. This is the larger treatment of logic which Kant commenced and which his Idealist successors sought to carry out. It is probable that much work has yet to be done in order to complete it. But unless the teaching of Idealism is to be wholly set aside, and I am not sure that even Mr. Russell wishes to set it wholly aside, we cannot assume lightly that a category such as quantity ought to be discussed after order, or eliminated from mathematical discussion altogether. To make such a pronouncement is only legitimate if we have first subjected these fundamental notions to close scrutiny in a more searching fashion than symbolic logic alone can do, and have made up our minds finally as to what we mean by them, and what is their relation to one another. Unless we do this confusion is sure to result, and we shall find ourselves speaking to those we are seeking to instruct in language to which they attach a different meaning. There exist systematic accounts in the logic books of these fundamental notions, in which their relationship is exhibited, and in which quality is shown in its logical relation to quantity, and quantity in its turn is compared with quantum, with number, with degree, with measure, and so on. These categories, it is said, cannot be defined apart from each other, and a precise

function in the process of knowledge must be attributed to each. The attempt to do this may have succeeded or it may not, but the reasons for making it are very cogent. Mr. Russell seems to think that the necessity for this tedious and difficult process has been superseded by the investigations of modern mathematicians. I do not think so. What he writes appears to me to divide itself into two parts—epistemology and mathematics. While I seem to see that it would have been of advantage if Mr. Russell had defined his categories before entering on the former, I cannot, so far as I can presume to judge, find that his purely mathematical reasoning really depends to any material extent on his metaphysics. This is a relief in reading a book so full of striking things and so obviously able as is his *Principles of Mathematics*. And I am the more encouraged in the view I hold because his mathematical doctrine is that of a school within which the agreement seems to preponderate over divergence of view. The work of this school does not appear to rest on any particular philosophical principles, and its reasoning is, as far as I can judge, wholly consistent with Kantian views of the foundations of mathematics, provided Kant's critiques are interpreted as most of the authorities of to-day hold that they must be.

But the mathematics of this school, if they are concerned with epistemological questions less than Mr. Russell would have us think, nevertheless do mark a real advance along the highway of scientific generalisation. Let us try to see something of what this advance means. I do not think that the new method imports any revolution in our fundamental notions. Many of its results might have come, to the best of such judgment as I have been able to form, from the application of the kind of criticism which Mr. Russell admits, as I pointed out in the early part of this paper, to have been properly directed against the school of Leibnitz and the older writers on the calculus. As a matter of fact, this new method has originated, not with German metaphysicians, but mainly with German mathematicians. Its scope is limited. It was originally devised to get rid of the necessity of expressing mathematical conceptions by reference to the standard of a spatial continuum, which was considered to be deficient in important respects as a basis, and to substitute for the spatial standard that of an arithmetic continuum. Whether the substitution of this new basis represents the last word, or whether it is only a useful makeshift, remains to be seen. Anyhow, for reasons which I will presently state, I retain the impression which I formed when some time since I read

a book by one of the pioneers of the new doctrine, Dedekind. The revolution is purely mathematical and not epistemological. It is concerned with no particular theory of the nature of inference, or of the relation of the judgment to reality. For the mathematician, however, it introduces fresh and great principles. Moreover the new region has for the student of logic the attractive feature that it is by no means so impenetrable to the non-mathematical reader as is most of the territory governed by the ordinary mathematician. Dedekind, who has a great gift of lucid exposition, sets himself to show this. And another writer, Mr. E. W. Hobson, who has written an admirably comprehensive and careful book on this new field of research—*The Theory of Functions of a Real Variable*—is almost equally intelligible to the general reader in those portions of his work which are concerned with the statement of principles.

Dedekind published two famous Memoirs, the first in 1872, *Stetigkeit und Irrationale Zahlen;* the second in 1887, *Was sind und was sollen die Zahlen.* They have been translated by Prof. Beman under the title *Essays on the Theory of Numbers* (1901), and are now classical. I shall try to disentangle the significance of the doctrines relating to quantity and number which are set forth in these Memoirs. To enable me to do this intelligibly I wish first to say something further about the conceptions of quantity and number.

It would have helped the student of recent developments in mathematical ideas if a settlement had been arrived at about the meaning of the words used in describing them. It is confusing to find, for example, quantity and magnitude used as convertible terms, and at times spoken of as though they were merely names for modes of existence in space. It is only natural that those who speak so should go on to assume that order does not presuppose quantity, and has nothing to do with it. In truth and in fact quantity is a highly general concept. It covers indefinitely every mode of continuous existence in which we have got beyond particular quality as its essential. When we regard the object of thought quantitatively we cease to attend to quality as of the essence of its being, and we concentrate on this, that the object has a characteristic which may be altered without affecting the existence or the nature of that of which it is the characteristic. It may be very important to know the number of trees in a wood, but the wood remains a wood although a thousand more trees grow up. Nevertheless conceptions or categories of this kind are forms of thought, and these "Denk-bestimmungen," as they have been called, are

not inert. They are root forms of intellectual activity, and because it is of the nature of the intellect to be active, it is constantly, in the process of judgment and inference, passing from link to link of the series which they form. Thus even within mere quantity, where the thing remains what it is while it becomes greater or less, we find constant development of the aspects of both continuity and discretion. It is forced on us that the intellectual process which takes shape in the judgment of quantity displays, as essential to it, both characteristics. They are not two kinds of quantity but the double implication of a single predicate. The antinomies of space and time and matter simply mean that we treat quantity at one moment in its discrete aspect, and at another as continuous, and fail to distinguish the two aspects. When quantity is regarded in its exclusive or discrete aspect, and this by abstraction is hypostatised, we pass to limited quantity or quantum, and when such a limited or definite quantity is made, in the process of thinking, definite, and so distinguished from other and similar manifestations of the definite relation of quantity, the outcome is the notion of a series each member of which is defined as such by reference to other members, and is regarded as one among many. Looked at as breaking up internally and exhibiting itself as containing a plurality of elements, the series gives us the notion of number. If it be remembered that in logic the category of quantity has thus a very wide and general significance it is plain that such operations as counting, with the numbers and order in series which result, are derivatives of the operation of thought which establishes the quantitative predicate. This is not, as I understand him, the doctrine of Mr. Russell, but it is a doctrine which appears to me not only to be consistent with, but to assist the theory on which the most modern mathematics bases itself. Mr. Russell seems to assume that the concept of quantity has been hitherto treated as a mere abstraction derived from the bare intuitions of space and time. But this is not really so. For logic, as I understand it, quantitative relations and series are constituted by operations of judgment which, as Kant hints in the passages I have quoted above, themselves make the intuitions of space and time possible.[1] Their foundation is logical, although it is in experience that they attain to concrete reality. Of course it is true that in the psychological history of our intelligence these abstract conceptions are evolved as experience progresses, and that in general we use

[1] See Herr O'Sullivan's monograph, pp. 42 *et seq.*

them in concrete applications, and after we have begun to realise the meaning of space and time.

But it is the great merit of the new mathematics to have independently illustrated the proposition that, to get at the real foundation of mathematical reasoning, we must by abstraction disentangle the conditions which are presupposed in even the most general and empty spatial and temporal consciousness. What are really derivatives are a hindrance and not a help in any search after first principles, and it is right, if it is practicable, to adopt methods which, by legitimate operations of logical abstraction under fundamental categories, can be made to depend on relations of pure quantity and number, to the exclusion of elements which belong to a subsequent stage in knowledge. Such relations and their concepts do not exhaust the nature of reality. It is as abstractions from an experience which has no existence apart from them, any more than they have apart from such experience, that we become aware of them. When Mr. Russell attributes to them and to the propositions which embody them " independence of any knowing mind," what he says has no more meaning for me than the sayings of Locke and his school about substance as existing in itself. And his system of symbolic logic seems to me to presuppose as the condition of its possibility an entire system of relations and concepts for which he makes no provision. Before we can go with him in accepting as fundamental and indefinable such notions as that of the relation of an individual to a class and of "such that" we must have travelled a long way. The presuppositions of symbolic logic and mathematical method alike seem to require more searching consideration than he bestows on them.

Moreover, unless the process of knowledge is one in which we begin with reality and are engaged throughout in extending the relations of the subject of the judgment in knowledge, it is to me, as I have already said, impossible to comprehend how knowledge can progress. Unless inference is neither merely deductive, nor merely inductive, unless it is as much synthetic as it is analytic, in other words unless each of these adjectives is *in itself* wholly inadequate to describe the process by which knowledge progresses, we cannot really get beyond our starting point. The most abstract problem of non-Euclidean Geometry seems to set out from a point of departure which is postulated as real, although, by the concentration of exclusive attention, the triangle, for instance, has been by abstraction stripped of a multitude of features to which we attend when we meet in every-day life with any-

thing coming under that designation.[1] But if this be true how can the method of mathematics be, as Mr. Russell would have us think, purely deductive?

The implied reference to reality which is characteristic of the mathematical as much as of every other form or judgment, is well illustrated by the process of counting. In simple counting, as in every process of judgment, we have an identity exhibited in differences and affirmed of reality, the elements of which present themselves in the shape of distinct units within a continuous process. The relation to this process is indicated by number. It follows that number, although we get to it by abstraction from the experience of serial mental acts, is not a mere derivative of the concept of time. What is essential is that the judgment of number should establish a logical *order* among the units, giving each a place in a series conditioned by separate judgments about other units. We may conceivably be aware of several units as existing simultaneously and yet as arranged in order of series. Again all the units are numbered in virtue of a continuous quality or identity which pervades them, and "every unit, though it may only be suggested by a momentary purpose"—"is a distinguishable part within a whole or aggregate consisting of such parts. The books on a shelf are not merely discrete, and the inches in a yard, or the units of weight in a gravitating body are not merely continuous; in every case the unit is a distinct or discrete part, and the sum is a self-identical or discrete whole. It is nonsense to speak of counting without saying what is to be counted" (what we count may be, and in all probability primarily are, the acts of judgment as acts of distinction and relation within a certain continuous quality) "and in specifying what is to be counted we specify at once the nature of the continuity and the rule of the discretion".[2]

Sigwart[3] takes much the same view of number as Mr. Bosanquet expresses in the passage just cited. We should think of number, he holds, as a spontaneous creation of thought in becoming conscious of its own activities, and as in this way, when it has once arisen, independent in its further developments of all that is sense-given. In it we merely bring into definite consciousness what we always do when, in thinking of and discriminating unities, we pass from one to another. He declares that wherever it is possible to combine even differences in one consciousness, so that

[1] On this point see Herr O'Sullivan's monograph at p. 68.
[2] Bosanquet, *Logic*, vol. i., p. 159.
[3] *Logic*, Eng. tr., vol. ii., p. 32 *et seq.*

memory can survey them and connect the beginning with the end, and discrimination include the whole within one boundary, there we have the possibility of the one; wherever it is possible to think of differences within a whole, or to combine a number of different objects while still maintaining the consciousness of their difference, there we have the possibility of the many. This is, for Sigwart, the foundation of number. Each number is not mere plurality, but a plurality which is bound together and limited, and so far thought as a unity, in one act of thought which combines together the repeated acts by which we have distinguished the units. He goes on to show that these definitions afford room for irrational and imaginary numbers. In these we extend the concept of number to all combinations arising out of our methods of calculation. The extension is justified by the fact that these combinations resemble actual numbers in this respect that they are all comparable as more or less (it would have been more accurate had Sigwart said in point of *order in series*), and can thus be brought into a series, and that therefore the different methods of calculation, similarly extended in meaning, can be applied to them. He points out, in this respect in close agreement as will be seen later on with Dedekind, that the possibility of inserting any number of fractions and irrational numbers between any two consecutive rational numbers, thus diminishing to any extent the difference between successive numbers, *seems* to reduce number—which originally arose out of discrete steps—to a continuum, and to transform it into a magnitude in the same sense in which space and time are magnitudes. But this inference he rejects. For he says that number is always discrete, since however far we may push our interpolation we can never succeed in reaching more than a finite number of intervening members, and the law according to which interpolation takes place, though it gives no definite limit, must always, from the nature of the numerical expression, call on us to break off somewhere. The continuous progress which intuition gives us in space and time can never, Sigwart affirms, be really expressed in the logical forms of number, which depend on unity and difference in determinate acts. In the differential calculus, he says, we attempt to break down the limits which arise from the nature of number, but we succeed in forcing upon it the expression of continuous change only by means of artifices in which we avoid assigning any numerical value to the differentials themselves, and confine ourselves to expressing their relations to each other in numbers and combinations of number.

I have quoted two contemporary writers in support of a view which I agree with Mr. Russell in holding strongly. Logical and epistemological principles have a close bearing on the problems which relate to the foundations of mathematics. What I dissent from is his method of approaching the consideration of these principles, and certain conclusions which have proved to be the result, such as his determination to divorce mathematics from any origin in experience and to treat it as an illustration of purely deductive method. With his description of the recent developments in mathematical science I repeat that I neither desire nor am competent to quarrel. It is his ideas about the ultimate foundations of reality that concern me, because I am not sure that he has appreciated the attitude of those logicians whom he criticises, even as regards mathematics. It may be quite true that "in Hegel's day the procedure of mathematicians was full of errors," but it is not true that these errors "Hegel did not condemn as errors, but welcomed as 'Antinomies'". If he will read the second part of the *Wissenschaft der Logik* he will find that Hegel's reproach was over ideas which Mr. Russell himself agrees with Hegel in regarding as sheer mistakes, and which Hegel regarded as the direct result of a failure to grasp the significance of the notion of quantity and what was implied in it. Nor is it fair to say such things as that philosophers argue "as if differentiability were a consequence of continuity" merely. The implied suggestion is misleading. Writers like Sigwart and Bosanquet would accept, as far as I can see, the most recent improvements in method made by Mr. Russell and other mathematicians without demur. But they would point out that these improvements are improvements in method merely, and do not touch root conceptions. On this point I shall have to say something later on. I wish first, in the light of the remarks I have just made, to return to the topic of Dedekind's new method.

From the standpoint of logicians this method is full of interest. In his Memoir on *Continuity and Irrational Numbers* he tells us how he was guided towards the new region in in which he has done so much as a pioneer explorer: "As professor in the Polytechnic School in Zurich I found myself (in 1858) for the first time obliged to lecture upon the elements of the Differential Calculus, and felt more keenly than ever before the lack of a really scientific foundation for arithmetic. In discussing the notion of the approach of a variable magnitude to a fixed limiting value, and especially in proving the theorem that every magnitude which

grows continually, but not beyond all limits, must certainly approach a limiting value, I had recourse to geometric evidences. Even now such resort to geometric intuition in a first presentation of the Differential Calculus I regard as exceedingly useful from the didactic standpoint, and indeed indispensable, if one does not wish to lose too much time. But that this form of introduction to the Differential Calculus can make no claim to being scientific, no one will deny. For myself this feeling of dissatisfaction was so overpowering that I made the fixed resolve to keep meditating on the question till I should find a purely arithmetic and absolutely exact foundation for the principles of infinitesimal analysis. The statement is frequently made that the Differential Calculus deals with continuous magnitude, but no explanation of this continuity is given. Even the most careful expositions of the Differential Calculus do not base their proofs upon continuity, but, more or less consciously, either appeal to geometric notions or depend on theorems which are not established arithmetically. Among these falls the theorem above mentioned, and further investigation satisfied me that this theorem, or one equivalent to it, might to some extent be looked on as a sufficient basis for infinitesimal analysis. It only remained to discover its true origin in the elementary conceptions of arithmetic, and at the same time to secure a real definition of the essence of continuity."

He proceeds to find that the whole of arithmetic arises out of the simple act of counting. This he defines to be "the creation in succession of the infinite series of positive integers, in which each individual is defined by the one immediately preceding". The fundamental act is the passing from an already formed individual to a new one to be formed. The combination of repetitions of this act is addition, and multiplication arises in the same way. So do substraction and division, but these, unlike the former, force us to the conception of negative and fractional numbers. If on a straight line we select a definite point of origin or zero point, and a definite unit of length for the measurement of segments, we can assign for every number, positive, negative or fractional, which has a definite arithmetical ratio to the others, and may therefore be called a rational number, a corresponding length on the straight line. But now we come to the difficulty. Among the infinite number of points which lie in the straight line there are those which correspond to no rational number, and there are lengths incommensurable with a given unit of length. For instance, as the Greeks long ago pointed out, the diagonal of the square whose side

is the unit of length is incommensurable with that side. If we lay off a length corresponding to that diagonal, we obtain an end point which corresponds to a numerical symbol but to no rational number. Thus it becomes apparent that our straight line is infinitely richer in point-individuals than our domain of rational numbers in number-individuals, and that our system of *rational* numbers, however complete, is inadequate to the complete and continuous measurement of lengths on our straight line. To our system of rational numbers we must therefore find out how to add new numbers such that the domain of numbers may possess the same completeness or continuity as the straight line. To do this we must find out what the continuity or absence of gaps in the geometrically straight line means. Now every point on the straight line separates it into two portions such that every point of one portion lies to the left of every point of the other. The essence of continuity Dedekind finds in a further principle which he states thus:—

"If all points of the straight line fall into two classes, such that every point of the first class lies to the left of every point of the second class, then there exists one and only one point which produces this division of all points into two classes, this severing of the straight line into two portions". Of this definition he declares that it must be regarded as axiomatic and cannot be proved to be true. If space has a real existence it may have gaps. But if, says Dedekind, this be so, the filling up in thought of the gaps would be the notional creation of new point individuals, and so would be in accordance with the axiom. It is now plain what has to be done. We must find a method of filling up the gaps in the discontinuous series of rational numbers so as to make it continuous. Ideal measurement along the straight line with the aid of a unit of length has broken down. But, if for this space-continuum which has turned out to be no true means of representing continuity, we can substitute an arithmetic or number continuum, the problem will be solved, for we shall have then got something to operate on which possesses the essential property of continuity as well as that of the discretion which is necessary for counting; in other words, which has concurrently inherent in it the two characteristics of pure quantity. Thus we shall, such is my interpretation of what Dedekind means, have brought mathematics back to the elemental and general category of quantity as its true foundation. The new instrument may be difficult to handle, and it is not necessary or convenient, as indeed Dedekind himself points out in a passage already quoted, to be constantly em-

ploying it even in infinitesimal analysis. But it is the only method, *so far discovered*, of placing infinitesimal analysis on a satisfactory basis. Some day a method may be discovered of dealing with space and the straight line on the basis of methods of ideal measurement that are on the one hand exact and continuous, and on the other comprehensive. So far such methods appear not to have been discovered.

From this summary of Dedekind's preliminary statement I pass briefly to the method of purely quantitative and non-spatial treatment. Of this there are several varieties. That of Dedekind is substantially as follows: He takes the system of rational numbers, discontinuous, as already has been shown. Now we can always by means of a rational number effect a separation of an entire ordered system or series of rational numbers into two classes such that, if we call the first class A_1, every number a_1 of this class is lower in order than every number a_2 of the second class A_2. This separation and the result described may be called a section (*Schnitt*), (A_1 A_2). Thus every rational number produces a section, and a section which obviously possesses the property that either among the numbers of the first class there exists an (ordinally) greatest, or among the numbers of the second class an (ordinally) least number. We may therefore say that corresponding to any given rational number, there exists a section which divides the aggregate series of rational numbers into two classes, such that all the numbers of the first class are less than all those of the second class; and such that either in the first class there is no greatest number, or else in the second class no least number. But suppose that we do, what we can effect with a series of numbers, though we could not make an analogous measurement along a straight line, divide the series so as to bring in irrational numbers. For instance 3 is not a square number. The entire series of rational numbers may yet be divided with reference to it into (1) a lower class which contains all the negative numbers and also those positive numbers of which the square is less than 3, and (2) a higher class which contains all the positive numbers the square of which is greater than 3. The first class obviously contains no greatest number. The second class contains no least number. The section, although a section primarily of rational numbers, is none the less related to the irrational number $\sqrt{-3}$, in the same way as A_1 the section first above described, was related to a rational number. Now we have got to something novel. For while it is true that between any two numbers, whether rational only or real, we can to an indefinite extent introduce intermediate numbers, so as to make

the series indefinitely everywhere dense, or, as it is called, connex, we cannot everywhere divide the series into sections by means of a merely rational number. But we can do this everywhere by means of an irrational number which belongs, as much as does the number that is rational, to the wider class of real numbers. The aggregate domain of rational numbers, taken exclusively of those that are irrational, is thus imperfect. A true continuum cannot consist merely of rational numbers, for these, while they exhibit everywhere discretion, do not everywhere exhibit continuity. The true continuum, in order to be everywhere perfect as well as dense or connex, and so to combine the characteristics of being completely continuous as well as completely discrete, must therefore consist of an aggregate of numbers that embraces the wider class of all that are real as well as the narrower class of all that are rational. Such an aggregate is called the continuum of real numbers, or the arithmetic continuum. What we have done is to introduce into the conception of the entire series of number, so as to fill up every conceivable gap in it, an unlimited membership of irrational or incommensurable numbers, which not the less can be placed in a series where the order of the arrangement depends on the rank of the members, and this rank in its turn depends on qualities which have no necessary reference to relations of magnitude or at least of measurable quantity. If the series be really continuous then these irrational numbers are just as much to be regarded as real as are the rational numbers, the only difference lying in the practicability of measurement. But even though the real number which divides the series is incommensurable it is just as capable of being defined as is a rational number in the series, for, in the way just indicated, its position in point of order can be shown with reference to the rational numbers in the series themselves. It may be treated as corresponding to a lower class or segment, as defined above, of a series of rational numbers, a segment which is none the less capable of defining, by reason of its having, as must be the case when the dividing number is irrational, no greatest number. For example, while the number 3 is readily defined to be, in the language of the new analysis, the *aggregate* (from the point of view of order merely and not measurement) of all rational numbers, which are less than the rational number 3, the irrational number $\sqrt{3}$ is defined as the aggregate of all rational numbers which are either negative, or, if positive, have their squares less than 3. Now as we can always deal with sections containing rational numbers exclusively, and can perform with them

the ordinary operations of mathematics, we have made a great advance. For the possibility of such operations is extended through the medium of these sections to the irrational numbers which they define. These, it is suggested, *plus* the rational numbers, together make up the whole of what is numerically possible. The two classes are said to exhaust the field of reality, and the infinity of numbers thus enlarged in their scope may be called *real* numbers. They present, it is alleged by the new school, in one of their aspects, an aspect with which we can operate consistently, a true continuum, a field where the quality of continuity is just as much and as necessarily present as is that of being discrete. Whether this method and the doctrine based on it carries us as far as some enthusiasts imagine, is at least a very open question. Do we ever get true continuity within the domain of number, even when extended so as to embrace the so-called real numbers? What do these real numbers and the irrationals which they include really import for epistemology and logic, as distinguished from the function of being convenient mathematical makeshifts? These are questions which do not appear to have been as yet adequately considered. But at all events for practical use number no longer shows gaps, to the extent that it did when we considered it as based on the intuition of the straight line, and we get, for the first time, as our object a marked advance towards a true continuum. It is not spatial but arithmetic. It carries us further back towards the notion of pure quantity, and is a new and potent method of abstraction, that is, of diverting attention from what is irrelevant in the reality which is the starting point. Its conception, whether we look at the intervals between the members of its series, or the continuity which arises from the infinite number of members of the series, is ordinal. Order, in other words, and not representation of the measurement of definite quanta, governs its constitution. It relieves us from the vagueness and limited character of the so-called intuitional continuum of extensive magnitude of the older mathematicians. For the methods of these last broke down when a specific and definite answer was sought to the question how a formula was to be found for *every* intermediate position through which a body moving in space passes. It was assumed that space was indefinitely divisible into finite parts, and analysis proceeded on this basis, and necessarily broke down. The reason was that the procedure tacitly assumed the exclusive existence of a merely discrete character of space, and negatived that continuous aspect which equally pertains and is equally vital to the reality of all that falls

under the category of quantity. The new procedure can and does take a fuller account of the continuous aspect of reality.

I have endeavoured to do what a layman can with a mind which, if mathematically ill-furnished, is at all events attracted by the subject, towards giving some account of Dedekind's main conception. And that of Cantor, as I understand it, seems to me to be no more than an analogous and equally intelligible means towards the same end. Instead of defining as Dedekind does, the elements of the aggregate of real numbers by means of a section of rational numbers, he accomplishes the same result by applying the notion of a convergent sequence of rational numbers. Space does not permit me to attempt to enter into the details of this method. The reader who is curious to follow it out will find a clear account of it at page 26 of Mr. Hobson's book on the *Theory of Functions of a Real Variable*, a book admirable alike in its lucidity and in its caution. I can here only observe that, just as to each of Dedekind's sections, so to each of Cantor's convergent sequences, there corresponds, not necessarily a rational, but certainly a real number. It is easy to see that since what seemed to Leibnitz and his followers to confine them to measurable magnitudes has been thus eliminated, and a mode of enumeration has been introduced which is at all events more nearly adequate to what is required by the conception of continuity, an arithmetical theory of limits and of variables becomes possible which escapes the old objections. Moreover another conclusion follows. In arithmetical analysis there is no room for an actual infinitesimal. For if, after the fashion of Leibnitz, we use the expression "infinitesimal" at all, it can only be to indicate the process whereby a variable, to which the numbers of a sequence converging to zero are successively ascribed as values, approaches the limit zero. An infinitesimal thus means a variable in a state of flux, or capable, if we like to treat it so, of occupying *any* ordinal position in a series, and never a number in the conventional sense. We cannot properly describe the sides of the polygons which are inscribed in a circle as under any circumstances infinitesimals. The length of the circumference of the circle is rather the arithmetical limit of the sequence of numbers which represents the perimeters of the inscribed polygons. When this sequence is convergent, and its limit is independent of the particular choice of the sides of the polygons, the limit so obtained determines the length of the curve. In case no such limit exists the curve is regarded as not having a length.

If the stern realities of experience left it open to us to

choose as we liked when we should use the concepts of continuity, and when those of discretion, the extension of knowledge would be a simpler business than it is. But for deeply seated reasons experience has and must have in it certain features which always baffle our attempts to regard it in the light of a perfectly coherent system. The search after a complete whole which shall embrace and account for all that we see and feel and hear is an unending one. Even why we pass from the category of discretion to that of continuity is not always plain. Erdmann, in a book which ought to be better known to students of this class of subject than it is, his *Logik und Metaphysik* (4th ed., p. 44), observes: "Das sehr merkwürdige Problem, wie ganz bestimmte Zusammengehörige Quanta (z. b. Seite und Diagonale des Quadrats) incommensurabel sein können, ware gelöst, wenn gezeigt würde warum, wenn, das eine als discret gedacht wird, das andere nur als Continuum genommen werden muss". Difficulties of the type to which Erdmann refers become, however, of much less importance in the presence of analytical methods which can take account of the discrete and continuous simultaneously. There is a passage in Mr. Hobson's book which is worth quoting as the conclusion of what I have to say upon this subject. After pointing out that the actual use of fractional numbers arose historically from the necessity of the process of measurement of extensive magnitude, he goes on (p. 13) as follows: "The notion of the essential nature of a fraction, dependent as it is upon the notions of a *unit*, and of the divisibility of such a unit into *equal parts*, is incompatible with the modern view that mathematical analysis should be developed upon the basis of a pure arithmetic, quite independently of all notions connected with the measurement of extensive magnitude. The modern tendency known as Arithmetisation manifests itself in the construction of theories of number and of the operations involving numbers, which depend entirely upon the conceptions connected with the process of counting, measure being regarded as a process foreign to Pure Arithmetic. The process of counting is an exact one; whereas measurement can in practice only be carried out with a greater or less degree of approximation, and can only ideally be made an exact process. Pure arithmetic is made the basis of analysis, not only in accordance with the general principle that the fundamental conceptions of a branch of Science should be irreducible to simpler conceptions, but also because the theory of ideally exact measurement has peculiar difficulties of its own. Our essentially inexact intuitions of spatial, temporal, or other

magnitudes, necessitate a process of idealisation in which the objects of perception are replaced by ideal objects subject to an exact scheme of definitions and postulates, in order that an exact science of measurement may be possible. The view is at present held by the majority of mathematicians that the nature of an abstract continuum, and that of a limit, are capable of formulation only in the language of a pure arithmetic, and that this science must therefore be developed upon an independent basis before it can be applied to the elucidation of the conceptions requisite for an abstract theory of continuous magnitude. The theory of measurement is, in accordance with this view, regarded as an application, and not as part of the basis, of Mathematical Analysis." Later on (at p. 51) he says: "The term 'arithmetic continuum' is used to denote the aggregate of real numbers, because it is held that the system of numbers of this aggregate is adequate for the complete analytical representation of what is known as continuous magnitude. The theory of the arithmetic continuum has been criticised on the ground that it is an attempt to find the continuous within the domain of number, whereas number is essentially discrete. Such an objection pre-supposes the existence of some independent conception of the continuum, with which that of the aggregate of real numbers can be compared. At the time when the theory of the arithmetic continuum was developed the only conception of the continuum which was extant was that of the continuum as given by intuition: but this, as we shall show, is too vague a conception to be fitted for an object of exact mathematical thought, until its character as a pure intuitional datum has been modified by exact definitions and axioms. The discussions connected with arithmetisation have led to the construction of abstract theories of measurable quantity; and these all involve the use of some system of arithmetic, as providing the necessary language for the description of the relations of magnitudes and quantities. It would thus appear to be highly probable that, whatever abstract conception of the intuitional conception of quantity and magnitude may be developed, a parallel conception of the arithmetic continuum, though not necessarily identical with the one which we have discussed, will be required." The concluding words of this last passage suggest that there is in Mr. Hobson's mind the same doubt as in Dedekind's as to whether the spatial continuum cannot be more adequately treated by analytical methods than has hitherto been the case. In the second volume of his *Wissenschaft der Logik* Hegel examines at some length the possibilities of basing the Calculus on the

notion of pure quantity as applied to the qualitative relations of quantitative *principia* (not elements). I have not sufficient mathematical knowledge to be able even to guess how far a method rigorously based on such a view of quantity might carry us in the investigation of spatial relations. Hegel himself, and his knowledge was not to be despised, seems to have thought that it could solve problems relating to the relation of spatial continuity to number which were in his day, and so far as I know still remain, unsolved. Whether he was himself on the track of a conception of quantity which would have served the purpose or not, it seems that both Mr. Hobson and Dedekind are disposed to be of opinion that the theory of the arithmetisation of quantity is not only a principle valuable in itself, but one which may guide us to a new and more complete conception, yet to be adequately worked out by mathematicians, of continuous space. Hegel's criticism of the mathematicians of his time was that they had piled up obstacles to their own path, and his detailed application of this criticism seems to me worthy of being better known than it appears to be.[1] For the real question which lies at the root of everything is what has been the true origin of the difficulties which mathematicians have been struggling to overcome. What is the real character of mathematical method? Is it directly dependent on conceptions which belong to logic?

Now Logic does not mean only the analysis of the process by which the individual develops in time his knowledge of his object-world. It means this no doubt. But the analysis itself suggests that the whole process, including the very meaning and existence of the mind and its object-world, implies something else. The process appears to be possible only in virtue of related universals of knowledge which are not the less the foundations of reality because they are themselves only real in a consciousness of the self and its object-world which is always concrete and individual. They form but one aspect of reality, yet an aspect which must be grasped and interpreted if the foundations of experience are to be reached. This discovery was made by Aristotle long ago, and again by Kant. A more thorough-going attempt to work it out was made later still by Hegel. The Hegelian system may have attempted too much. It has been caricatured, and the caricatures have frightened one set of people and stirred another to merriment. But the fact remains that on the study of

[1] He used to complain that mathematicians called everything irrational in which reason began to intrude, *i.e.*, in which *systematic* heterogeneity made its appearance.

many departments of science, history, jurisprudence, sociology, for example, it has exercised an influence as transforming as it appears to have been enduring. Greatest of all, however, has been its influence on the study of logic in the whole of its developments, and it is not too much to say that no man is in this department abreast of the knowledge of his time who has not mastered the critical examination conducted by Hegel into the condition of logic as he found it. The student may accept or reject the result, but he will get into difficulties if he does not take the trouble required for its understanding. Now one of the pieces of work on which Hegel bestowed close attention was, as I have already stated, the careful sifting out of the category or, as he called it, "Denk-bestimmung" of quantity. The predicate of mere existence tells very little, but it is the basis on which something is recognised as possessing quality, which is a determinate mode of existence. And when quantity is predicated we have got further still. The quantity may be greater or less while the quality remains the same. Quantity, in other words, is, as I pointed out earlier in this paper, a mode of existence in which alteration does not necessarily affect existence. The field of corn may still be a field though its boundaries are enlarged or contracted. Now this very general category of quantity specifies itself into subordinate forms which are less abstract. But they are still characterised by what belongs to the parent category itself, and among the characteristics inherent in this parent category is the marked feature to which allusion has already several times been made.

It is of the essence of quantity and of its derivatives such as number always to be capable of presenting a double aspect, that of continuity and discretion. There is not a continuous quantity existing separately or even capable of being predicated as if real apart from discrete quantity. The aggregate of rational numbers is an illustration of the truth of this. No sooner have we found it full of gaps, discrete, than we are forced in thought to try to fill in the gaps and render it continuous. This is the genesis of the effort to regard the system of number as rendered continuous through the medium of the irrational numbers.[1] And yet the completed system of real numbers so obtained is a system in which the numbers are separable in reflexion according to their ordinal rank. All knowledge is a process of abstraction, and the language in which we embody the abstractions is never adequate to

[1] Mr. Russell says truly that even classes of finite integers can themselves to some extent suffice to generate continuity; see the explanation of this at p. 299 of his book.

the concrete individuality of the subject matter or the mutual implications of its predicates. The actual judgment of experience cannot be exhaustively analysed or shut up in any proposition. And yet, in order to study its structure and even to get clear knowledge, we must fix its predicates in thought as separable, and hypostatise them by abstraction into apparently independent realities. It is the province of logic to warn us of the real meaning of this process, and the limits of its legitimacy. We must not treat aspects, which are properly separable by abstraction only for a particular purpose, as if we were entitled, outside these limits, to hypostatise them into really independently existing realities. It is because we easily fall into such errors as speaking as though there were a continuous space and also a discrete space, that we fall into the fallacies of the "Heap" and of "Achilles and the Tortoise". It is a similar misinterpretation which leads people to assume that, because the length of a curve can properly be defined as the arithmetical limit of the sequence of numbers which represent the perimeters of a sequence of inscribed polygons, therefore this length is to be taken to be known to exist independently. The explanation of the difficulties which puzzled the older mathematicians in relation to incommensurable magnitudes is to be found in just such uncritical dogmatism about the category of quantity.

At the beginning of this paper I quoted, from the address to the Aristotelian Society which Mr. Russell criticises, further illustrations of the same fallacy in what, at all events until recently, was the current mode of teaching the Differential Calculus. I suggested that the real significance of the differential co-efficient might have been found in the continuous aspect of magnitude. For the elements in the differential co-efficient are not really separable, and do not stand for "infinitesimals". The differential co-efficient is a symbol which represents, not actual or separable minute quantities in their relation to each other, but simultaneous rates of change in x and a function of x. It stands for the relation with which x and its function, if taken to represent magnitudes, disappear, and it is because we are regarding the process as one in which quantity is taken as continuous that the ratio which characterises the relative rates of change remains even at the zero or vanishing point. What we are dealing with is, as I pointed out at the beginning, in truth and in fact qualitative relation of quantitative *principia*, which, as being *principia*, are factors or moments, but not self-subsistent quanta. If this be kept in view we diminish perplexities that arise whenever we try to regard and reason

about these moments as quanta, from the point of view in which quantity means what is discrete and nothing else than discrete.

What then, it will be asked, is the place in logic of the new method of the arithmetisation of quantity? The answer is that it is a powerful means to an end. The end is the treatment of quantity so as to do full justice to its continuous as well as its discrete aspect and to exhibit these aspects in their mutual implication. By abstraction the notion of number as representative of what is conventionally measurable is for the moment set aside. Although when the category of number is thought out it is seen to imply continuity as well as discretion, number is popularly used to represent what is discrete. It must also be borne in mind that number symbolises the discrete aspect of quantity, even when the notion of How Much is eliminated, and what is dealt with has been reduced by abstraction to mere rank, or order in a series. The series is *primâ facie* discontinuous. But the enlarged scope which the new method gives to number, and the extension of the concept to the whole domain of real numbers, brings us back to the aspect of continuity which had been lost sight of. In other words, so far from the new method eliminating quantity, it deals with quantity in its most abstract and pure form, and it takes account not only of its continuous but of its discrete aspect. The means by which this is accomplished is by making abstraction in as complete a fashion as possible from certain elements in the concrete processes of mathematics which are not essential and which hinder and do not help. It is not true that the processes even of pure mathematics are only concerned with mere logical conceptions. I cannot agree with Mr. Russell in thinking that they do not start from concrete reality. To me it seems, for reasons which I gave when discussing the process of counting, that whether we look at the methods of Euclid or at those of Dedekind and Cantor, they start from actual concrete images and proceed by making abstraction from all, or as much as possible, that is not relevant to their purpose. In this they resemble the methods of other departments of knowledge. They bring us back to relations of quantity, which because they are highly abstract are also very far-reaching, and they help us to realise in a particular region the presentation of experience as a systematic whole, the comprehension of which enables us to go far beyond what we actually experience. The category of quantity and its derivatives are the logical concepts which guide us in making the necessary abstraction.

The difficulty that arises from the tendency to mix up continuity and discretion is not new to mathematicians. The importance of what are known as Indeterminate Forms arises from the illustration they afford of the necessity of distinguishing between the two aspects of quantity. For instance $^0/_0$ and ∞/∞ are instances of Indeterminate Forms which the student has to consider carefully before he can grasp the meaning of a differential co-efficient or make a really intelligent application of the differential calculus. He must not, for example, assume that $^0/_0 = 1$, and he must, on the other hand, bear in mind the desiderandum that a function shall have a definite value corresponding to every value of its argument. By way of illustration take the function $(x^2-1)/(x-1)$. If we put $x=2$, the synthesis of the function is easy. But if we put $x=1$ the final operation may seem to result in $^0/_0$. But the student must not *in this case* assume that algebraic principles warrant him in taking $^0/_0$ to be $=1$. If we insist on the requirement that a function shall have a definite value corresponding to every value of its argument, and seek to define the value of the function in question when $x=1$, we are naturally guided by *the principle of continuity*. This leads us to define the value of $(x^2-1)/(x-1)$ when $x=1$, so that it shall differ infinitely little from values of this function corresponding to values of x that differ infinitely little from 1. We obtain as the result that, for values of x which differ infinitely little from 1, the value of $(x^2-1)/(x-1)$ differs infinitely little from 2, and the value thus specially defined is called the limit of the function. Indeterminate Forms are another illustration of how, in the higher analysis, for the consideration of definite quanta there is substituted the consideration of a different aspect of quantity, the qualitative relations of quantitative *principia*. Purely ordinal series, Cantor's Infinite, and many other conceptions used in the newest methods, are further illustrations of the same process. So is a variable, if interpreted in the new fashion. We must abstract, in considering it, from the foreign elements involved in such illustrations of a variable as that of a point moving in a straight line or a curve. The modern arithmetic continuum seeks to avoid the appeal to spatial extension or even temporal succession to make its nature manifest, and indeed those who are in earnest with it do all in their power to exclude such ideas from its conception. They confine themselves, as rigidly as human nature will allow, to simply infinite sequences determined in the continuum, sequences which they regard as a series of distinct determinations of the variable, in which the elements are in

logical succession. These sequences are the domain of the variable, and analysis is thus rendered capable of making statements that are applicable to every real number in the sequence, and which are valid for *any* particular number that may be selected. This is, as I interpret him, the meaning of the apparently paradoxical statement which Mr. Russell makes in his paper in MIND, that "a variable does not vary". It is a corollary that, as he points out, a limit belongs not to a variable but to the class of values of the variable. Now all this results from a mathematical process of abstraction which excludes irrelevant elements, just as the conception of the triangle, obtained for the purposes of geometry, excludes thickness of lines, colour, and a host of other characteristics possessed by the triangles which we recognise as such in every-day perceptive experience. It is the same process, only carried further by means of categories of a more general and less derivative character. The use of all such categories is to enable us to make abstraction of what is irrelevant and confusing, and so get clear knowledge. The result is incorporated in our conception and even in our perception or image of the real world. What is characteristic of mathematical procedure is likewise characteristic of every other form in which knowledge is advanced.

Mathematical knowledge does not differ in kind from other knowledge. It conforms to the common type. In his *Essentials of Logic* (p. 58) Mr. Bosanquet has defined the nature of knowledge in words which I will quote, for they indicate admirably the aspect which knowledge presents to the school of thought from which Mr. Russell dissociates himself, as I think unnecessarily. "Knowledge is always judgment. Judgment is constructive, for us, of the real world. Constructing the real world means interpreting or amplifying our present perception by what we are obliged to think, which we take as all belonging to a single system, one with itself and with what constrains us in sense-perception, and objective in the sense that its parts act on each other independently of our individual apprehension, and that we are obliged to think them thus. The process of construction is always that of exhibiting a whole in its parts, *i.e.* an identity in its differences; that is to say, it is always both analytic and synthetic. The objects of knowledge differ in the mode of relation between their parts and the whole, and thus give rise to different types of judgment and inference; and this difference in the form of knowledge is a difference in the content of logic, which deals with the objects of experience only from the point of view of their properties as objects in an intellectual world."

It is just so that we proceed in interpreting and constructing the object world under its quantitative aspect, whether we use the older forms of mathematical knowledge or the new. Because the new method of treating quantity is highly abstract, and makes jettison of much that is familiar in the every-day process of counting, it raises questions which appear to be novel. But the apparently new region into which we are introduced is not really as new as it is sometimes taken to be. It has been, as I hope I have shown, partially, at all events, explored by logicians. Some of the root conceptions with which it abounds are familiar to the careful student of Kant. A fuller discussion of them in their direct application to mathematical method is to be found in later writers. In Dr. Hutchison Stirling's book on the Hegelian system, one section of the mathematical discussion in Hegel's *Wissenschaft der Logik* is translated and commented on—the section which deals with the notion of the Mathematical Infinite. This is followed by a long section (*Wissenschaft der Logik*, part 2) which Dr. Stirling considered too technical to be suitable for translation in his own book. In this section Hegel examines the foundations of the calculus as they had been interpreted by the succession of great mathematicians who had written up to his own time. I am not suggesting that Hegel is to be taken as having spoken authoritatively on mathematical subjects. Nor do I doubt for a moment that in mathematical method immense progress has been made since his time, and that much of what he wrote about has been superseded. But there exists this borderland between Logic on the one hand and mathematics on the other. The struggle of the mathematician to get rid of what hampers him and is irrelevant, leads him to use a set of categories, such as number, order, measure, etc., which require the more careful treatment the more he is thrown back on their exclusive employment, and gives up the more familiar and rougher instruments which have till recently been in common use. Now Hegel has made the most complete attempt that exists to give a systematic account of the meaning, scope, and relation of these categories. It may be that he was too ambitious and was in advance of his time and, consequently, without materials which have now been, for the first time, obtained. But he would be a rash person who thinks that he can neglect the study of the warning which Hegel gave, and, at the same time, be sure that he has done the best for himself in the obscure borderland where mathematics touches metaphysics. Until the student knows what those who speak from both sides of it have

to say, he can hardly feel certain where he is going in this region.

If he does not care to give the time which is required for the digestion of the difficult books of the great German Idealist, there are more recent writers who can help him. Lotze and Sigwart are not Hegelians, nor would Mr. Bradley care to call himself so. Whether Mr. Bosanquet would or would not I cannot say. Probably no one to-day can properly be labelled with names that are a century old. But men such as these have listened to the warning which Hegel gave against the hidden perils of unconscious dogmatism. However much with them methods may differ, their purpose is a common one. Theirs is the critical attitude which is born of insight into characteristics of the real that are generally neglected. How full the path is of pitfalls the earlier history of the calculus has shown. The story of the school of Leibnitz is not without instruction for the student of to-day, whether he be mathematician or logician.

One of my difficulties in comparing the results offered by Mr. Russell with those reached by other logicians is that the comparison is but rarely of like with like. Such writers, as, for instance, Lotze, Sigwart, Bradley, or Bosanquet, look on knowledge as a process which may be broadly described as the amplification of a present perception by an ideal interpretation which is identified with and extends it, as what Lotze calls the conversion of an impression into an idea.[1] When, in order to get at the general forms of knowledge, they admit abstractions, and characterise them by signs and symbols, they are careful to insist that it is only partially that these can be taken as adequate representations of the concrete and complex reality of the process of knowledge. But symbolic logic does not observe this canon. Mr. Russell does not hesitate to shake himself free of what he calls the "psychological" reference. He does not strive to be sure that his symbols and their continuations will be pictorial of the actual processes of thought. His method is purely deductive. One difficulty about this method I have already alluded to. He nowhere explains how any advance beyond the premises is possible. He does not put or answer Kant's great question as to how synthetical judgments *a priori* are possible. But there is yet another difficulty. His method obviously has great value in dragging to light hidden obscurities, and in improving definitions. What it accomplishes beyond this it appears to accomplish by being untrue to its profession of

[1] In the chapter in his *Logic* on the Theory of the Concept.

purely deductive principle. It lapses into the process of the ordinary waking consciousness, the process of amplifying perceptions, which are not the less perceptions because they have been translated into images idealised by reflexion and abstraction. Still, the character of the method is such that the tendency is irresistible to try to use terms in senses which they do not ordinarily bear. The result is an apparent widening of the gulf which Mr. Russell supposes to exist between the work of the school to which he belongs and other schools of thought in Mathematics and Philosophy. For example he begins part v. of his book, the part which discusses Infinity and Continuity, by telling his readers that "It was formerly supposed, and herein lay the real strength of Kant's mathematical philosophy, that continuity had an essential reference to space and time, and that the Calculus (as the word *fluxion* suggests) in some way presupposed motion or at least change. In this view the philosophy of space and time was prior to that of continuity, the Transcendental Æsthetic preceded the Transcendental Dialectic and the antinomies (at least the mathematical ones) were essentially spatio-temporal. All this has been changed by modern mathematics. What is called the arithmetisation of mathematics has shown that all the problems presented in this respect by space and time are already present in pure arithmetic." Now in so far as these words affect to describe the conclusions, even about mathematics, of epistemology prior to the advent of the school of Mr. Russell, they are surely very far wide of the mark. For reasons which I have given earlier in this paper they are hardly true even of Kant.[1] And the citations already made from logicians such as Sigwart and Bosanquet show that they are not true of them. They are quite beside the mark as regards Hegel. Mr. Russell appears to labour under a misconception about the standpoint of Idealism. Its view of continuity contains, so far as I am aware, no "appeal to the mass of unanalysed prejudice which Kantians call intuition". It leaves Mr. Russell as free as I think I have shown it leaves Dedekind, to construct an ordinal theory of continuity, and if he pleases even to adopt such highly technical definitions of a continuous series as the one which he offers as a simplication of that of Cantor, that it is so when every segment, upper or lower, has a limit, and the series has a first and last term, provided that a denumerable compact series is contained in it in such a way that there are terms of this latter series be-

[1] See Herr O'Sullivan's monograph, p. 105.

tween any two terms of the original series. What Idealism affirms, and I do not see that Mr. Russell has offered any real reason for controverting the proposition, is that a highly general but accurately definable concept of quantity is presupposed by Mr. Russell's notion of order, and that his method of treating continuity is applicable only to special forms which mathematical analysis brings to light. By refinements of abstraction, perfectly legitimate provided we realise what we are about, the method concentrates on the qualitative aspects of quantity. These observations appear to me to apply to his account of mathematical infinity. It is not true as he suggests, that logicians, Hegelian or otherwise, revel in the discovery of contradictions and in pronouncing them to be incapable of resolution. When they point out apparent contradictions it is as evidence that a too narrow view has been adopted, and that a larger outlook is necessary. To put it shortly, there is much that is controversial about Mr. Russell's interpretation of philosophy, but his mathematical conclusions do not appear to depend on his being right in this interpretation, or even in his own philosophy. Yet whether or not his philosophical system will stand investigation, the scientific world owes him a debt of gratitude for a gallant effort to bring order into a region where chaos has reigned, and to throw a searching light into the obscurity which surrounds the foundations of mathematics.

In conclusion I will recapitulate: As the foundation of all mathematical method there is presupposed the judgment of quantity. In the judgment of quantity what are in point of quality like are judged as unlike, but only in respect of differences which do not affect their quality. The category or *Denk-bestimmung* which makes this possible is no mere derivative from experience, or even from order or number, categories which themselves come later because they imply the predication of the quantitative character as the condition of any meaning being put into them. The simplest recognition of order in series, the barest act of counting, involves the judgment of an identity exhibited in differences and affirmed of reality. When the elements of the series present themselves in the shape of distinct units within a continuous nature we have reached number. The concept of number thus defined is from its very nature both continuous and discrete in its character, and every logical concept which depends on quantity as its foundation has this double aspect. It is through the derivative categories of order and number, which bring into further determinateness the characteristics which are implicit in quantity itself, that we get to such fun-

damental concepts of mathematics as *order, series, unity, aggregate* and *correspondence.* Abstraction only enables us to arrive at these from the study of experience because they are already presupposed in experience and are part of the foundations of the judgment which sustains it. As the concept of quantity elaborates itself into these and other complex forms the principles which it embodies progressively give rise to qualitative differences, and the character of a mere sequence or aggregate of indifferent elements is replaced by that of synthesis of differences in a system or whole that is individual. That this should be so is the outcome of principles presupposed in all knowledge. They make possible the methods of the new mathematics in regard to limit and infinity, and without them the researches of Dedekind and Cantor would be logically unintelligible. Looked at from another side, even the nearest approach we can find to a purely quantitative judgment is only possible by abstraction directed to one aspect of the actual judgment. In judgments about reality lies the beginning of all knowledge, mathematical and otherwise. In the consciousness, not, it is true, of spatial extension, but of succession in judgments of quantity, and therefore in experience, we must seek the source from which the arithmetic continuum has been evolved by abstraction. Its origin is no mere deduction from exclusively logical principle.

The view of quantity just stated is what led Hegel to criticise the ideas of his day in regard to infinitesimal analysis. He called attention to the abstract and imperfect notions then current which had brought about attempts to ignore the continuous character of quantity as being a character which was taken not to be real in the same way as was discretion. He insisted that, if order was to be got out of confusion, it should be recognised that continuity and discretion were as real as they were in actual experience inseparable, and that the foundations of the calculus were thus qualitative relations of quantitative *principia.* He did not, as has been suggested, delight in finding contradictions, for the mere sake of finding them. But he held that they were inevitable for those who attempted to express what was really qualitative as quantitative. Mathematics has made great strides during the eighty years which have elapsed since Hegel wrote; the leaders in mathematical thought have in the interval emancipated themselves from much that was fallacious. But the problem of the logical foundation of mathematical method appears to me to stand much where the Idealists left it. What Hegel wrote on the nature of series, for example, is still well worth studying. It makes clear several things after which those

who have forgotten or never learned the lesson he taught, are groping to-day. So far, however, as practice is concerned, mathematicians, with a sound instinct, born of necessity rather than of action on settled principle, have given up the old traditions. As conceptions connected with quantity have progressed it has become apparent that the standard of spatial extension, which was used for the demonstration of continuity, breaks down when it is sought to exhibit completely by known methods along with continuity the correlative and inseparable aspect of discretion. The sequence of rational numbers is, on the other hand, defective on the opposite side. For the standard of the arithmetic continuum it is claimed that it exhibits continuity and discretion as correlatives and in their true relation. The completion of the continuum by the introduction of irrationals marks progress towards the bestowal on the series of real numbers of a quality which is at all events more akin to that of continuity than was the case before this completion was attempted. The variable gets a definition that can be defended on the assumption that it has prescribed for it as its domain the field of the new and completed continuum of real numbers. Within this continuum series, and classes within series, can be mapped out. When the property of exhibiting a limit is transferred from what used to be the obscurely conceived variable to the class of values which now form its domain, escape from logical confusion is made possible. The distinguished mathematicians who have discovered the new method have brought their science a stage further on in its progress towards harmony with the true logical conception of quantity. Whether what they have said is the last word, or whether a still more perfect means to this end will be hereafter devised, no man can predict. The future will not disclose its secrets, and among these is the answer to the question whether the reputation for adequate continuity of the new domain of the variable will survive the criticism of the mathematicians and logicians of that future.

II.—ON OUR KNOWLEDGE OF IMMEDIATE EXPERIENCE.

By F. H. Bradley.

In this paper I am to treat of a difficulty which arises in connexion with immediate experience. The scope of the discussion must however be limited. Problems will be raised on all sides with which here I shall be unable to deal. And even on the main point I must be satisfied, if I have shown how the question presses for an answer.

I have had occasion often [1] to urge the claims of immediate experience, and to insist that what we experience is not merely objects. The experienced will not all fall under the head of an object for a subject. If there were any such law, pain and pleasure would be obvious exceptions; but the facts, when we look at them, show us that such a law does not exist. In my general feeling at any moment there is more than the objects before me, and no perception of objects will exhaust the sense of a living emotion. And the same result is evident when I consider my will. I cannot reduce my experienced volition to a movement of objects, and I cannot accept the suggestion that of this my volition I have no direct knowledge at all. We in short have experience in which there is no distinction between my awareness and that of which it is aware. There is an immediate feeling, a knowing and being in one, with which knowledge begins; and, though this in a manner is transcended, it nevertheless remains throughout as the present foundation of my known world. And if you remove this direct sense of my momentary contents and being, you bring down the whole of consciousness in one common wreck. For it is in the end ruin to divide experience into something on one side experienced as an object and on the other side something not experienced at all.

The recognition of the fact of immediate experience opens

[1] See, for instance, Mind, N.S., Nos. 6 and 33. The reader is also referred to the index of *Appearance*, etc., *s.v.* Feeling.

the one road, I submit, to the solution of ultimate problems. But, though opening the road, it does not of itself supply an answer to our questions. And on the other side in itself it gives rise to difficulties. With regard to these there are some points which I have dealt with elsewhere, and other points which perhaps I have failed wholly to see. There are again questions which have come before my mind, but have been passed over, or at most have been touched on by the way. It is one of the latter which in these pages I shall attempt to discuss. The problem was noticed by me years ago, and Prof. Stout in my opinion did well to insist on its urgency.[1] This difficulty may be stated by asking, How immediate experience itself can become an object. For, if it becomes an object, it, so far, we may say, is transcended, and there is a doubt as to how such transcendence is possible. On the one hand as to the fact of immediate experience being transcended we seem really certain. For we speak about it, and, if so, it has become for us an object. But we are thus led to the dilemma that, so far as I know of immediate experience, it does not exist, and that hence, whether it exists or not, I could in neither case know of it. And with such a result the existence of immediate experience becomes difficult to maintain, and the problem which has been raised calls urgently for treatment and solution.

The solution, if I may anticipate, is in general supplied by considering this fact, that immediate experience, however much transcended, both remains and is active. It is not a stage which shows itself at the beginning and then disappears, but it remains at the bottom throughout as fundamental. And, further, remaining it contains within itself every development which in a sense transcends it. Nor does it merely contain all developments, but in its own way it acts to some extent as their judge. Its blind uneasiness, we may say, insists tacitly on visible satisfaction. We have on one hand a demand, explicit or otherwise, for an object which is complete. On the other hand the object which fails to include immediate experience in its content, is by the unrest of that experience condemned as defective. We are thus forced to the idea of an object containing the required element, and in this object we find at last theoretical satisfaction and rest.

This may be stated in general as the solution of our problem, and we might proceed forthwith to work out this

[1] In the *Proceedings of the Aristotelian Society*, 1902-3. I had called attention to the problem and the general mode of its solution in *Appearance*, p. 93, footnote.

solution in detail. I have however thought it better to begin by examining two difficulties well known to psychologists. My object in thus digressing is to show that our problem is not merely metaphysical, recondite and negligible, but that the principles applied in treating it cannot elsewhere be ignored. The reader can however, if he pleases, omit this whole digression as irrelevant. Of the two difficulties just mentioned the first concerns Attention and the second Introspection.

(I.) With regard to the effects of attention there is a familiar puzzle. I am going here to take attention in the sense of noticing without entering into any inquiry as to its nature.[1] We all, when our attention is directed to our extremities or to some internal organ, may become aware of sensations which previously we did not notice. And with regard to these sensations there may be a doubt whether they were actually there before, or have on the other hand been made by our attending. And, though this question may seem simple, it really is difficult. Can we directly compare attention's object with something to which we do not at all attend? To answer in the affirmative appears not easy. Can we then recall what we have not noticed, and, now attending to this, compare it with some other object? If reproduction necessarily depended on attention, any such process would seem impossible. But, since in any case this view of reproduction must be rejected as erroneous, we may reply confidently that the above comparison is a thing which actually happens. Still, asserting the possibility and the general principle, we have not removed all doubt as to the special fact. For how do I know in a given case that my present attending has not vitally transformed its result? Am I to postulate that in principle attention does not and cannot alter its object? Such an assumption, so far as I see, could hardly be justified. Certainly, apart from such an assumption, we may argue that any effect of attention requires time, and that hence, if the sensation appears as soon as we attend, the sensation must have preceded. And this inference is strengthened when we are able to pass thus repeatedly and with the same result from inattention to its opposite. Still at its strongest an argument of this kind seems far from conclusive. And in any case I cannot think that no more than this is the actual ground of our confidence when we refuse to believe that attention has made the thing that we feel.

[1] On this I have written elsewhere, MIND, N.S., No. 41, and O.S., No. 43.

I agree that in some cases we recollect our state before attention supervened, though such a recollection in most cases, I should say, is absent. And again usually, and if you please always, we have the persisting after-sensation or after-feeling of our previous condition. But, all this being admitted, the question as to the actual ground of our confidence remains. In order to compare our previous state we *ex hyp.* are forced now to attend to it, and there is a doubt whether we can assume generally that attention does not alter. We have therefore to ask whether we are in a maze with no legitimate exit, and whether such a result, if accepted, does not throw doubt on the whole subject of this article.

I will state briefly what I take to be the real way of escape. (*a*) We must first assume that anything remains the same except so far as I have reason to take it as altered. This assumption is everywhere necessary, and may be called fundamental.[1] (*b*) Next we must hold that apart from any attention we may be aware of a change in our condition. Without anything which could in any ordinary sense be called attending, we can experience a difference when a change takes place in our general or special felt state. (*c*) There is again an experienced change when attention (say to a feeling B) supervenes, and this particular experience is felt otherwise than as a mere change, say from A to B. Hence from the absence of this special feeling, as well as from the presence of the ordinary feeling of change to B, we infer that our sensation B does not depend on attention, but was previously there. We have, that is, on one side a mode of feeling when one sensation, A, merely changes to another sensation, B, while on the other side, when I attend to B, though that attention brings a change of feeling, it does not bring the same mode as goes with such a mere transition as from A to B. I therefore assume that the change made by my attending is not a change to B itself. And we may perhaps add that when, while already attending to B, I go on to observe it more specially, I may still fail to gain any feeling of change either to or from B, though on the other hand I

[1] I do not mean by this that it is ultimate and self-evident (*cf. Appearance*, pp. 601-602), for, if a thing remains, there must *ex hyp.* be some change about it. We therefore have to abstract from this change. We find a certain connexion of content in the thing, or between the thing and its context, and we take this connexion as true, and as hence not to be made false by any mere circumstance. Such a truth, like all truth, is an abstraction, and a doubt may be raised as to its ultimate legitimacy. But this is the principle which underlies and justifies our practical assumption and procedure whenever we assume that something remains the same amid change.

am of course aware of a change in myself. Now I am not suggesting that in the above we have a demonstrated conclusion, but it furnishes, I think, the ground for our view as to attention's limits. Further this view, once suggested, justifies itself in working. And it leaves us with this main result that we have feelings, such as those of change from A to B, and that, though these feelings have not been attended to, they are both real and reproducible. In any case apart from this assumption there seems to be no way of exit from disastrous puzzles.

I will now fill out this general sketch with further detail, which the reader who does not require it may omit. I feel a change, and that something has happened, say, to my finger. On attending I find that it is bitten by an insect. Of the previous sensation I have possibly enough remaining or reproducible to enable me to know that before the change my finger felt much like the others, and to enable me to repeat the change in idea.[1] I now attend to my other fingers, but they do not, on this, become bitten. There has hence been, I can argue, a felt change of my finger and an ensuing attention, the latter being felt as a different change. And by attending to my other fingers I cannot get the same result. I have neither the recalled felt change nor the present effect. My attention always gives me a felt change, but it will not give me these other special feelings, which therefore, I infer, have come to me otherwise. My present attention is in my power, but there are certain things, I find, that will not follow from my present attention. And, generalising this, I conclude that, prima facie and apart from special evidence, attention does not alter its object. On the other side I tend to assume that, where the felt change from A to B cannot be recalled, there, so far and apart from other evidence, it was absent. We obviously in all the above have no demonstrative proof. For on the one side we cannot prove that attention did not under some unknown conditions in a given case produce the entire result. And on the other side we must admit that, where the felt change of sensation was weak, its existence may now be for us irrecoverable. In arguing therefore from present defect to past absence we may well be deceived. And hence there are many cases where we have to remain doubtful. But generally where, beside the change I feel in attending, there is another recalled felt change ending continuously in the object, I conclude that the attention did not make this. And this conclusion

[1] There is, we must remember, an identical basis of feeling in all my fingers.

is strengthened by repetition under varying conditions. And it is confirmed by a mass of experience which is made intelligible by the doctrine that in general attention does not make its object. On the other hand, where the above felt change cannot be verified directly or again on sufficient evidence be inferred, I may conclude, to speak in general, that it was absent, and that the attention has more or less produced its object. If, for instance, in my finger certain sensations follow and follow gradually whenever I attend, and, further, cease as I cease to attend, and if with this there is no other change recalled or to be inferred, I argue that attention is at least in part the cause. And this conclusion is strengthened and is generalised by experiences the same in principle which can be multiplied at pleasure. And once more, though not incontestable, the conclusion is found to serve. But my object here is not to enter into detail and in consequence to provoke discussion on points intricate and difficult and on which I have no special competence. What I am here concerned with is to urge merely one main result. This problem with regard to attention must prove insoluble except on a certain assumption, the assumption of a felt change not noticed but effective and more or less reproducible.

(II.) We may pass now to a kindred difficulty attaching to what is called Introspection. Can I observe my own present state, and, if not that, what in the end can I observe? And, putting on one side all reference to attention, let us attempt to deal briefly with this puzzle. To say that my present state is not observed and that I depend wholly on memory, leads us (as in part we have already seen) into a position which is not tenable. Let us agree, rightly in my opinion, that I can reproduce that which at the time of its occurrence was not an object, yet where is the warrant that my reproduction is accurate? I can hardly postulate that here there are no errors, and how are the errors to be corrected? And on the other side, if I can thus remember my past state, it seems strange that I am unable to make it an object while present. The appeal to memory seems therefore in any case inadmissible; and further for myself I am unable to verify in introspection this constant presence of memory. To myself, when I try to observe exhaustively, say, some internal sensations, the idea that I am struggling to remember them seems even ridiculous. To myself I appear to be observing something which *is*, and, apart from certain unsound views, I have found no reason to discredit this appearance. What I feel, that surely I may still feel, though

I also and at the same time make it into an object before me. And any view for which this is impossible begins, I think, by conflict with fact, and ends, I am sure, in inability to explain facts. That I cannot make an object of the whole of my felt self all at once, so much is certain in fact, and the principle seems clear.[1] But that I can observe nothing of what I now feel, seems the false inference of a perverse theory.

But with this we are left face to face with a difficulty like the former one. Introspection is the attempt to observe my actual contents, and thus to take them as qualifying a construction called my self. To do this without residue, we agreed, was impossible, but that limitation need not trouble us. The difficulty and the problem arise in connexion with the general mass that at any moment is felt but certainly is not throughout an object before me. Take an emotional whole such as despondency or anger or ennui. A part of this doubtless consists in that which, whether as sensation or idea, is before my mind. Any such object or objects we can observe, and, when we cannot keep them in view, we can postulate that they remain unaltered except so far as we have reason to suppose a change.[2] But in an emotional whole there are other felt elements which cannot be said to be before my mind. And now I desire both to bring these before me and to know that I have accomplished this task correctly.

With regard to the second of these points we must recall some results already reached. We have to assume that a change in feeling is felt, not in general merely, but as a change of this or that character. When my mood alters I feel, not a mere difference, but my mood to be different. And, on the other side, observation of my mood is felt as a difference but not as an alteration of my mood. We may take it in general to be the case that observation does not alter.[3] Thus, when for instance in despondency I observe my visceral sensations, these feelings are translated into objects, into perceptions and ideas, but none the less, though translated, the original feelings remain. Hence (and this is the point) the persisting feelings can be felt to jar or to accord with the result of observation. For we have seen that generally in feeling we may experience the disagreement of elements. We have seen that a fresh

[1] The principle involved is this, that, in order to have an object at all, you must have a felt self before which the object comes.

[2] This is a mere application of the general postulate which we noticed before. It is unnecessary to discuss here our various special grounds for supposing the presence or absence of change.

[3] On the other side it is true that observation of my feelings may, according to the conditions, go on to increase or to suppress them. But I think that this point may be ignored here.

fact, such as observation itself, must become an element contained in a new felt whole. And thus, when I pass psychically from despondency to despondency observed, I have not only a general sense of change to something new, but I feel more specially the presence or absence of novelty and an agreement or a jar with the object before me. When to my felt emotion, that is, its translation is added, I am aware of a harmony or discrepancy between that addition and what went before and still remains.[1] Apart from theory we should all agree that, when despondent or angry, a man can feel that a description of such states is right or wrong, though he may be unable to compare this description with another object. Again we should agree that, when not despondent, a man may assent to a description of despondency, because he feels himself, as we say, into it, or may dissent because he cannot do so—and this though in neither case he could assign a special ground. And what happens here, I presume, is that the description excites feelings which tend to fill themselves out to the content of the usual felt state. And between this content and the description offered there is then experienced, as above, the sense of agreement or jar. I have not forgotten that, in order to test the truth of a description, a man may appeal to the usages of language, or again possibly may recall some definite action or other symptom, or set of symptoms, from the past of himself or another. But, apart from an appeal to present feeling, nothing of this kind, however important it may be, is sufficient by itself, I would submit, to account for the facts.

I will now in passing touch briefly on the question of means. By what means and how am I able in, say, despondency to make an object of that which I feel? I am not inquiring how we come to have an object at all, nor am I even asking as yet how feeling in general can come to be an object. The question is limited at present to the above case of an emotion, but it has a more general bearing which will show itself later. And the point of importance is this. In any

[1] I am in a certain felt state which I go on to observe. The description which results from the observation is an object added to my former felt state, and is now itself an element in a new felt state. This object gives me (*a*) a feeling of change, but (*b*) not a change of my special felt mood, say, anger. The description further, if correct, brings (*c*) a sense of harmonious addition without change, and, if incorrect, (*d*) a feeling of incongruity. If the incongruity is positive (*α*), I feel a jarring new element. If it is negative (*β*), there is still a sense of discord, since defect has a positive quality. And there is, in this latter case especially, an instability in the object induced by ideal supplementation. This instability is largely the work of that which is merely felt

emotion one part of that emotion consists already of objects, of perceptions and ideas before my mind. And, the whole emotion being one, the special group of feeling is united with these objects before my mind, united with them integrally and directly though not objectively.[1] And this, I think, supplies us with an answer to our question. For when the object-part of our emotion is enlarged by further perception or idea, the agreement or disagreement with what is felt is not merely general and suffused, but is located through the object in one special felt group. And this special connexion and continuity with the object explains, I think, how we are able further to transform what is observed by the addition of elements from what is felt. There are features in feeling (this is the point) which already in a sense belong to and are one with their object, since the emotion contains and unites both its aspects.

Finally if we reject the idea that what is felt can serve to judge of what is before us, let us consider the position in which we are left. The attempt to fall back on memory, we have seen, resulted in failure, and what else remains to us? You may say "The object satisfies me or not, and that is the whole of it and the end of it". But assenting to this very largely, if not in the main, I cannot agree that no more is to be said as to the special satisfaction. The object, you may reply, in the end is found to be self-contradictory or harmonious; but once more here, while agreeing in principle, I cannot sit down content with such a mere generality. Why, when my mood is incompletely or wrongly described, does the object go on to jar with itself and to be found self-inconsistent? There is more at work here, we saw, than the associations of language, and there is more even than any redintegration, ideal or active, merely from the object by itself. For, with merely that, there is no accounting for the whole of the agreement or jar that I feel. You may appeal here to "dispositions," and may argue that in one case my dispositions are satisfied and in the other case are restless. But if the disposition is not felt or in any way experienced, and to me is absolutely nothing but its effects, such an explanation once more seems insufficient. For in observing my mood I do not seem to be satisfied with the result, or to reject it, for no reason except that I find myself moved, I know not how, in this direction or the opposite. I seem on the contrary to myself to be engaged throughout and to be face to face with actual fact, and, wherever I dissent from or agree to an

[1] Again even on the object-side of the emotion there will of course be a greater or less extent of non-analysed content.

observed result, I seem to have a reason in this actual fact. And further I do not seem to have a mere general reason, but on the contrary something specific which I directly know and experience. The object before me is unstable and it moves so as to satisfy me; and in this point and so far we are perhaps all agreed. Where I go on to differ is that I insist that, in addition to other influences (whose working I admit), the object is moved also by that which is only felt. There are connexions of content now actually present in feeling, and these are able to jar with the object before me. And they are able further to correct that object by supplementation from themselves. And this, I submit, is the one account of the matter which on all sides is satisfactory.

We have now considered the problem offered both by Introspection and by Attention, and we have been led in each case to the same main result. These puzzles are insoluble unless that which I feel, and which is not an object before me, is present and active. This felt element is used, and it must be used, in the constitution of that object which satisfies me, and apart from this influence and criterion there is no accounting for the actual fact of our knowledge. We must go on now to deal more directly with the main question of this article. We must ask how immediate experience is able to make a special object of itself. The principles which we have laid down and have hitherto applied, will furnish us, I trust, with a satisfactory answer.

I must however, before proceeding further, try to explain what I mean by immediate experience. And I will begin by pointing out a possible sense of this term which I desire to exclude. The Unconscious or the Subconscious may stand merely for that which I do not notice or notice specially, and it may stand again merely for that which, though I am aware of it, is no object before me. But these words on the other hand may bear a more extreme meaning. The Unconscious may signify something which is more than anything which at any moment I actually feel or in any sense actually am aware of. The Unconscious, in this sense, is still psychical, and it is continuous with my psychical contents, but it is outside all that at any moment I experience as mine. The matter contained in these two compartments, of the Unconscious and Conscious, may itself be to any extent one and indivisible, and may itself thus constitute a single world. But across this matter a line of demarcation is drawn, and while on one side of this line I feel and am aware, on the other side I have no actual experience at all. Across this opaque barrier

may come to me influences or even messages, but the barrier can never be transparent. The influences or messages, to be anything for me, must take their place as elements in the region of my feeling and consciousness, and outside that region I do not experience them. They belong in a word to the Unconscious. On the other hand the barrier, though opaque, is shifting. It may from time to time be moved so as to include elements which before were outside it. And this inclusion does but embrace what before was somehow psychical, though not experienced as mine. In something like this sense the Unconscious, whatever its previous history, has been used very widely and in varying applications by German philosophy since the beginning of the last century. It attained popularity in the well-known work of von Hartmann (1869), and has lately threatened to invade our literature under the specious title of the Subliminal Self.[1]

Against any interpretation here of immediate experience in the above sense I would desire specially to warn the reader. Outside that of which a man is aware there is, I agree, a larger world of experience. The content of this world, I again agree, is in a sense continuous with that which directly fills his consciousness. But he cannot experience the former content immediately, and, were he to do so, then (as it seems to me) the man's self would be destroyed. The position of the line dividing these two worlds no doubt may fluctuate. More and less of content may come from time to time within the man's feeling centre. But so long as that centre exists, there is a world within it which is experienced immediately, and a world without it which is not in this sense experienced at all. To call this world the region of the Unconscious, in the sense merely

[1] Any one who can suppose that Mr. Myers' Subliminal Self was any discovery of his own, must, I think, either be ill-informed or else unable to recognise the identity of ideas where the language is modified and the ultimate intention not the same. The term 'Subliminal' is, I presume, the translation of a Herbartian phrase which has long been current, and with regard to the matter of Mr. Myers' book, while his industry and literary power are both unquestionable and admirable, it would be difficult, I imagine, to produce from it a single new idea. His capacity for philosophical thought can, I think, be easily estimated. Mr. Myers by his own showing was acquainted with von Hartmann's work. And yet he failed to perceive that, with regard to my subliminal self, the vital question is whether it is really my self at all, and, if so, then how far. He could not see that the problem which most pressed on him was not as to the existence of my self after death, but as to the existence and reality of my self at any time and at all. The conclusion to which I at least am forced is that in Mr. Myers' work is a collection of everything and anything which seemed to him usable prima facie as evidence for his foregone result, and that of inquiry in any other sense there is as good as nothing.

that I cannot be directly aware of it, to myself would be misleading. But in any case this world is outside of my immediate experience. Whether tracts of a man's consciousness can under any conditions be wholly split off and so exist independently, I am unable to say.[1] If however this takes place, the principle remains unaffected, for we have forthwith two or more centres of immediate experience not directly connected. I use in brief immediate experience to stand for that which is comprised wholly within a single state of undivided awareness or feeling. As against anything 'unconscious' in the sense of falling outside, this is immediate as being my actual conscious experience. And further it is immediate as against those other special and mediated developments which throughout rest on it, and, while transcending, still remain within itself. I will now, dismissing all further reference to the Unconscious, attempt briefly to explain this difficult and most important sense of immediacy.

Questions at once arise on some of which we can but touch in passing. (*a*) Was there and is there in the development of the race and the individual a stage at which experience is merely immediate? And, further, do we all perhaps at moments sink back to such a level? We all (at least usually) have in what we experience the distinction of subject and object, or at least (it may not mean the same thing) the awareness of an object as a not-self. If we like to take 'consciousness' as the state in which we experience a not-self, we may thus ask if there ever was or ever is an experience which is in this sense wholly subconscious. In such a state there would be feeling, but there would not be an object present as an "other". And we should so far not be aware of any distinction between that which is felt and that which feels. For myself I think it probable that such a stage of mind not only, with all of us, comes first in fact, but that at times it recurs even in the life of the developed individual. But it is impossible for me to enter further on the matter here (see MIND, O.S., No. 47). What I would here insist on is the point that feeling, so understood, need not be devoid of internal diversity. Its content need not in this sense be simple, and possibly never is simple. By feeling, in short, I understand, and, I believe, always have understood, an awareness which, though non-relational, may

[1] The part split off may still be united in feeling with the rest (see Prof. James, *Psychology*), and, if so, is not split off wholly. But I do not suggest that an absolute division is impossible.

comprise simply in itself an indefinite amount of difference. There are no distinctions in the proper sense, and yet there is a many felt in one. We may thus verify even here what we may call, if we please, an undeveloped ideality. And, not only this, but such a whole admits in itself a conflict and struggle of elements, not of course experienced as struggle but as discomfort, unrest and uneasiness. We may, I think, go on to add that the whole in feeling can feel itself present in one part of its content in a sense in which it does not so feel itself in another part. And of course change in its contents will be felt, though not experienced properly as change. Nor do I see reason to doubt that the laws of Redintegration and also of Fusion (if we admit such a law) will hold in this field.

(*b*) I have thought it better to deal so far with the stage, real or supposed, where experience is merely immediate. But, in order to avoid controversy, I shall in the present paper consider this no further. And for our present purpose we need not assume that such a stage of mere feeling is even possible. I shall here take experience to exist always at the level where there is the distinction of object and subject and a theoretical and practical relation holding between them.[1] I do not mean of course that this relation itself always exists for consciousness in the form of a relation proper uniting and dividing two terms. On the contrary we have no such object, I must insist, except so far as we have reached self-consciousness. And to suppose that we are always self-conscious to myself would seem absurd. It is however impossible for me here to discuss these questions on which I have entered elsewhere (*Appearance*. *Cf.* MIND, N.S., No. 46), and I must pass on to emphasise a further point which seems here all-important.

(*c*) Whether there is a stage where experience is *merely* immediate I have agreed to leave doubtful. Feeling is transcended always, if you please, in this sense that we have always contents which are more than merely felt. But on the other side at no moment can feeling ever be transcended, if this means that we are to have contents which are not felt. In a sense therefore we never can at any time pass beyond immediate experience. The object not-self, and again the object and subject related before my mind, all this is more than mere feeling. But again the whole of it would be nothing for me unless it came to me as felt; and that any actual experience should fall somewhere outside of feeling

[1] We may, as was noticed above, speak of this stage as "consciousness" in contrast with mere feeling.

seems impossible. At every moment my state, whatever else it is, is a whole of which I am immediately aware. It is an experienced non-relational unity of many in one.[1] And object and subject and every possible relation and term, to be experienced at all, must fall within and depend vitally on such a felt unity.

At any moment my actual experience, however relational its contents, is in the end non-relational. No analysis into relations and terms can ever exhaust its nature or fail in the end to belie its essence. What analysis leaves for ever outstanding is no mere residue, but is a vital condition of the analysis itself. Everything which is got out into the form of an object implies still the felt background against which the object comes, and, further, the whole experience of both feeling and object is a non-relational immediate felt unity. The entire relational consciousness, in short, is experienced as falling within a direct awareness. This direct awareness is itself non-relational. It escapes from all attempts to exhibit it by analysis as one or more elements in a relational scheme, or as that scheme itself, or as a relation or relations, or as the sum or collection of any of these abstractions. And immediate experience not only escapes, but it serves as the basis on which the analysis is made. Itself is the vital element within which every analysis still moves, while, and so far as, and however much, that analysis transcends immediacy.

Everything therefore, no matter how objective and how relational, is experienced only in feeling, and, so far as it is experienced, still depends upon feeling. On the other side the objective and the relational transcend the state of mere feeling and in a sense are opposed to it. But we must beware here of an error. We cannot speak of a relation, between immediate experience and that which transcends it, except by a licence. It is a mode of expression found convenient in our reflective thinking, but it is in the end not defensible. A relation exists only between terms, and those terms, to be known as such, must be objects. And hence immediate experience, taken as the term of a relation, becomes so far a partial object and ceases so far to keep its nature as a felt totality.

The relation (so to express ourselves) between immediate experience and its felt contents, and specially here to those contents which transcend it, must be taken simply as a fact. It can neither be explained, nor even properly described,

[1] I need not ask here if it is possible for my experience to consist of one single feeling.

since description necessarily means translation into objective terms and relations. We possess on the one side a fact directly felt and experienced. On the other side we attempt a description imperfect and half-negative. And our attempt is justified so far as the description seems true, so far, that is, as, though inadequate, it does not positively jar, and again is felt positively to agree with our felt experience.

(*d*) There are several points which I cannot discuss here, but may notice in passing.[1] The felt background, against which the object comes, remains always immediate. But on the other hand its content may to some extent show mediation. Parts of this content may have at some time been elements included in the object, and may have been internally distinguished into relations and terms. However, none the less now, this relational content forms part of the felt background. Again in the object not-self, on the other side, we may find tracts the contents of which have never been analysed. They are, so to speak, nebulæ in which the non-relational form still persists internally, and in which the complexity does not go beyond simple sensuous co-inherence. And, as we saw in the case of an emotion, the matter contained in these nebulæ, and in the not-self generally, is continuous as to its content with that matter which remains merely felt. It is impossible however here to enlarge on these questions. And I cannot ask here how far the not-self both in its origin and its essence is distinctively practical. Nor can I point out how far and in what sense we have special not-selves depending on various relations, permanent and transitory, to special selves. I must hasten onwards to attempt to deal directly with the main problem of the present article.

I will however, before proceeding, venture to repeat and to insist upon this main conclusion. Immediate experience is not a stage, which may or may not at some time have been there and has now ceased to exist. It is not in any case removed by the presence of a not-self and of a relational consciousness. All that is thus removed is at most, we may say, the *mereness* of immediacy. Every distinction and relation still rests on an immediate background of which we are aware, and every distinction and relation (so far as experienced) is also felt and felt in a sense to belong to an immediate totality. Thus in all experience we still have feeling which is not an object, and at all our moments the entirety of what comes to us, however much distin-

[1] *Cf. Appearance*, Chaps. ix. and x.

guished and relational, is felt as comprised within a unity which itself is not relational.

We may now approach the two main questions of this article. (i) How can immediate experience, we have to ask, ever serve as a criterion? and (ii) How can immediate experience itself become an object and a not-self, since *ex hyp.* it essentially is no object? The first of these questions, after what has gone before, may be dealt with briefly.

(1) I cannot, it is obvious, discuss here the general problem of the ultimate criterion. We may or may not agree that in the end this consists in felt uneasiness and in its positive opposite. That which satisfies will, according to such a view, be the general head under which fall reality, truth, goodness and beauty. But it is impossible to enter on this here, and still less to inquire as to the special characters of these diverse satisfactions.[1] What I wish to emphasise is the point that I do not take immediate experience as being in general the criterion. I am not urging that in agreement merely with this we are to find in all cases our answer to the question of truth and reality. The problem here before us is limited to a special issue. How, we must inquire, in the cases where my immediate experience does serve as a criterion of truth and fact, is it able to perform such an office?

We have already, in what has gone before, anticipated the answer. I can feel uneasiness, we found, both general and special apart from any object, or at least without regard to any object in particular. Again I have a sense of uneasiness or its opposite in regard to a particular object before me. I do not, so far, make an object of my uneasiness and hold it before me in one with the object; but so far, without actually doing anything of this kind, I feel the jarring or unison specially together and in one with the object. And we have now to ask how this felt disagreement can become a contradiction before me in the object, so that I am not merely dissatisfied with that but can go on to reject it as unreal.[2]

What is required is that the object should itself become

[1] I assume here that goodness is not to be used for the general term which is equivalent to satisfaction in general. But whether goodness is to be used in a wider or a narrower sense, is to myself a question merely of nomenclature.

[2] I cannot enter here on the question why and how in the end inconsistency is connected with unrest. Pain and pleasure, it is obvious, have here great, if not fundamental, importance. But I must pass this matter by.

qualified by the same content which was present merely in the feeling self as harmony or discord. As soon as this qualification has appeared, I have actually before me in the object that which previously was felt within me to be harmonious or to jar in regard to the object. The feeling remains as before, but it no longer is merely grouped round and centred in the object. The feeling itself is also before me in the object-world, and the object now confronts me as being itself satisfactory or discordant.

The object can gain its fresh qualification in various ways. It naturally is unstable and in constant change. Apart from what we may call external alteration, there are reactions from the subject. Even where these are non-acquired, they often tend to make the requisite change in the object. And then, as we have seen before, there is redintegration from the object both physical and psychical. This redintegration again is all-pervasive, and holds good beyond the object-world and within the region of mere feeling. Hence the object, having been continuous with what is felt in me, both generally and in special groups, becomes an ideal centre and bond. It has a tendency both to restore and to qualify itself by associated content whether foregone or present. And further, as soon as this qualification from whatever cause has taken place, the identity of the content before me and within me is felt. Thus I am no longer merely satisfied or in unrest with regard to the object, but the object contains for me and itself is that which I feel must be accepted or rejected.

I am attempting here to deal briefly with a difficult point. It is a matter which tends on all sides to entangle us and to lose itself in complications. It threatens everywhere to bar our progress by raising ultimate problems with which here we cannot deal. I am endeavouring therefore, so far as I can, both to narrow and to simplify the issue. We may feel satisfied or otherwise when we have contents felt to be harmonious or jarring, and further a perceived object may also in feeling be an element and an important element in a special felt group. Then, when the object (as may happen from various causes) itself acquires the content which before in feeling gave satisfaction or unrest, I become aware of the perceived object as that which in itself gives satisfaction or discord. And according to the nature of the dissatisfaction and of that which is done to remove it from the object, my immediate experience can act in various ways as the criterion of this object. For the felt uneasiness, until it is removed, tends naturally, as we have seen, to pass into perceived discord and unreality.

We may recur to our former instance of an emotional state. I may either be endeavouring to describe this objectively, or again it may come to me simply as my felt practical relation to an object. In either case we have, first, an object which does not satisfy, and, in the second place, we have dim uneasy feelings in myself which are not objective and before me. Let however the object from any cause —an instinctive action, a chance sensation or an oscillation of emphasis—develop its content in a certain direction, and the situation is changed. That which formerly was but felt in regard to the object has become now, also and as well, a quality of the object. And it may satisfy us because it is that modification of the object which answers to what we felt and feel. Or on the other hand the change may locate a contradiction in the object. This contradiction may bring before me that old discord which before was merely felt, or again, according to the circumstances, it may answer to a newly-created uneasiness in feeling. But in any case the object is accepted or rejected, because it expresses or fails to express the felt demand of immediate experience.

(2) From this hurried treatment of a difficult matter I pass on to deal at last directly with the special subject of this article. We must ask how immediate experience is able to know itself and to become for us an object. That such knowledge exists in fact seems to me incontestable. Immediate experience certainly cannot make an object of itself throughout and in all its individual detail. And such a result not only fails in fact to be achieved but is impossible essentially. We can however set our immediate experience before us not only in partial detail but in its main general character. We can know about it as a positive experience, an awareness of many in one which yet is not relational; and I must attempt to point out the steps by which such a conclusion may be reached. But I am not here offering any genetic account of the matter. That inquiry, however important, may here fortunately be ignored. The idea of immediate experience, once suggested, is, like other ideas, verified by its working. And all that I am concerned with here is to show that the origin of the suggestion is itself not in principle inexplicable.

(i) We can in the first place have before us as an object the idea of a complete reality. Our actual object, as we saw, is unstable, and its advance (so far as it advances) in a certain main direction tends generally to remove uneasiness and to

bring satisfaction.[1] Hence we can form (I need not ask how) the idea of an object with all uneasiness removed entirely, an object which utterly satisfies. But this means an object with nothing that is really outside it in the form of an 'elsewhere' or a 'not-yet'. The 'elsewhere' or the 'not-yet' that falls really outside the object, precludes (this seems obvious) entire satisfaction. We hence are led to think of an object without any external 'elsewhere' or 'not-yet,' an object which in some sense contains within itself, and already is qualified by, every real possibility. We form in other words the idea of an all-inclusive Reality. And this idea, being set before us, may so far satisfy us as true and real. The Reality with anything outside of it will now not merely be felt as defective, but will in addition be discrepant with its own idea. And anything now that is suggested or that can be suggested, if it fails to be there *in* our actual object, must be made somehow *of* the actual object, if at least that object is to be complete.[2]

(ii) We have thus the idea of an object which is complete and all-inclusive, while on the other hand the object actually before us is incomplete. But this perceived object is changed, and, let us here say, is changed by addition. And, with this, the source of the added elements goes on to become for me a problem. (*a*) These elements, I proceed to judge, come to me in part from the unknown not-self. This is an inevitable inference the nature and validity of which it is perhaps not necessary here to discuss. We have hence, in this unknown province, a reality which has the form of an object not-self, but which on the other side is not present actually before me in perception. And this reality must be set down as included within my complete object. (*b*) Again within that object which I

[1] I am not saying that *every* satisfactory addition to the object is preceded by uneasiness and fulfils a felt need or want. That in my opinion would be going at least beyond the facts.

[2] The reader will bear in mind that I am not asking here if the above idea is *true*. That is a question which here may be ignored. There are two points which I may notice in passing. (*a*) It may possibly be suggested that, instead of taking everything as *of* the object, I may take it as merely *together with* the object, and that this exception is fatal. But in this case I reply that the 'together' has now itself become the object—an object in my judgment most unsatisfactory but still answering the purpose of the text. (*b*) Again it may be said with regard to the 'not-yet' that, given a *recurrence* of a certain character, the 'not yet' may be harmless. To this I answer that in such a case the 'not-yet' qualifies this character which recurs, and in some sense is included within this character, and that taken as really external it still means incompleteness. But, obviously, innumerable difficulties attaching to what is said in the text may occur to the reader, and must here be passed by.

actually perceive there are contained (as we saw) tracts more or less undistinguished internally. These tracts are nebulæ the contents of which have on the one hand manifoldness, but on the other hand are more or less without the relational form. They have within them adjectives which sensuously inhere and cohere, though these adjectives have not yet been ordered. But, as our knowledge increases, these sensuous wholes go on more or less to be broken up and discriminated. And the object, which of course is continuous throughout, appropriates the result of this process. Hence the object now possesses to some extent actually all its contents in a discriminated form, and for the rest it can assume (rightly or wrongly) that the same result, though not actual, is possible. The object will now include for us both its distinguished and undistinguished contents, the latter taken as distinguished ideally though not in actual detail. How far and in what precise sense it is proper to attribute reality to these unmade distinctions, we are not concerned here to inquire. It is enough for us that the idea of the complete object now includes within itself an objective 'not-yet' external to its actual detail, and again an objective 'not-yet' lying undistinguished within the fact which is given. And, having concluded so much, the self so far is satisfied with the idea before it, and it feels that this idea is somehow true and real.

Now in the above two cases (we must go on to observe) there is a difference, a difference which is felt. When an addition is made to our object from the outside we feel this addition as new. I do not mean that in this respect it does not matter how the alteration of the object is made, and that, however the addition comes, we have precisely the same feeling. I admit the diversity, but I insist that, in spite of this diversity, we have, when the object is added to from outside itself, a specific feeling of newness, and that this feeling differs from that which comes when the object develops itself from within itself. In the latter case (the case of what we called nebulæ) the content was actually there though it was not yet distinguished, and the content was already felt as being there; while in the former case (the case of addition from without) the content was not felt at all. The added features in both cases are felt as new, but in the one case these features arrive from a world which is unfelt, while in the other case the features already were somehow present in my actual awareness. And the difference between the two arrivals shows itself in each case in a different feeling. The reader who finds a difficulty here should recall the results we have accepted as true. In the first place everything, the

object included, is actually felt, and, in the second place, a change in feeling itself also is felt. All that we have added here is the conclusion, that in the two cases distinguished above there is in each case a specific felt difference.[1]

(*c*) But beyond these two cases we have also a third. An addition may be made to our object, but neither from the unknown not-self without it nor from the undistinguished tracts within itself. We saw that, when a felt emotion is described, a man may feel that the description agrees or does not agree with an actual fact of which he is aware. And yet we found that this experienced fact, by which the description is measured, has contents not objectively before the man even in an undistinguished form. The object in its wavering, and in its movement to complete itself though redintegration and otherwise, changes in directions which cause on one side satisfaction and on the other side uneasiness. And it is, largely or mainly, because these suggestions are felt to be in unison or discord with something already felt as present, that they are accepted or rejected. In something of the same way (we need not trouble ourselves here with the difference) the beautiful reality may seem to give you what you wanted, though what you wanted you did not know, or may seem to say for you what you always meant and could never express. This experience may doubtless in part be illusory. The want in part may not actually have been there before it was merged in satisfaction, and the meaning may in part never have gone before its expression. But upon the other side the experience certainly conveys to us things that were not perceived but were actually felt within us. Again earlier in this article we saw how in psychological introspection my self is put before me as an object, an object to be completed ideally. And its content, we went on to perceive, is filled up in part out of elements which I merely feel, and which in no sense are before me in the shape of an object. And we may once more remind ourselves in general how the object is continuous in substance with the content that merely is present in feeling, and hence tends persistently to complete itself by that content.

But, the fact being as above, how is the self ever to become aware of this fact or even to suspect its existence? How is the merely felt to become in that character an object? In the main, I think, this question has by now been answered. When my object is increased and the addition comes from

[1] I am of course not supposing that the consciousness which we are considering, knows at the present stage about these feelings all that we from the outside and at a later stage perceive.

that which was and is felt, there is, in such a case, first, a positive sense of expansion and of accord. And there is, next, an absence of the feeling of complete otherness and newness. We have not here quite the same experience as when the object is increased from the undistinguished not-self, but we have an experience more or less similar. This felt absence of disturbance, and this positive sense of something the same although new, prevent my attributing the change to that actual object-world which extends beyond my object. Can I then take the change as arising from the undistinguished tracts present within my actual object? Once more here, we find, the path is closed. For the feeling here, though similar, is not the same as that of which in the present case I am aware. Again, however much I develop the object in idea, I seem always to be left with a sense of defect. Further in some cases (through a persisting after-perception or otherwise) I can reproduce the special object as it was experienced before the addition. And here I find that the new feature does not in fact fall even within the undiscriminated parts of that object.

To repeat, my object, felt to be unsatisfactory, is changed and now is qualified by an addition. This addition gives a positive sense of agreement and unison. It is without the sensation of disturbance and it gives the feeling of identity with what went before. On the other side this feeling differs from that which I experience when the object is developed from its own undistinguished tracts. And in recalling the change of the object, where this is possible, there is, in passing between the earlier and the later object, a feeling of difference. And this difference remains even when I attend to those contents of the object which are not discriminated. For the above reasons I cannot set down the change as due to the object even so far as that is undistinguished.

Generally then my object is added to, and the new matter cannot be taken as without a source. But in the first place the matter is not felt as wholly new but as something already there and mine. And, in the second place, what is new cannot come from the object-world. It goes beyond my actual object, and yet I cannot attribute it to the non-perceived object-world, or again to any non-relational nebula contained within my object. The origin of my experience therefore is non-objective and it is also non-relational; but, on the other side positively, it comes to me as something which already was present to me. The idea therefore is suggested of an experience neither objective nor relational but in a word immediate. And this idea, being suggested

(no matter how it is suggested), satisfies me so far, and is accepted as true and real. The process outlined above may, if you please, contain logical flaws. Whether that is or is not the case, I am not concerned to discuss. And the true history and the real genetic origin of the idea reached, you many contend has escaped me. That would be an objection which once more I am not called on to answer. I claim to have shown how the idea of immediate experience can be brought before the mind, however otherwise normally it may be brought there. But the idea, once suggested, is verified by its working, and its acceptance does not logically depend upon the manner of its discovery.

The whole process which I have sketched may be briefly resumed thus. Our actual object fails to satisfy us, and we get the idea that it is incomplete and that a complete object would satisfy. We attempt to complete our object by relational addition from without and by relational distinction from within. And the result in each case is failure and a sense of defect. We feel that any result gained thus, no matter how all-inclusive so far, would yet be less than what we actually experience. Then we try the idea of a positive non-distinguished non-relational whole, which contains more than the object and in the end contains all that we experience. And that idea, as I have endeavoured in this paper to show, seems to meet our demand. It is not free from difficulty, but it appears to be the one ground on which satisfaction is possible.

The reader who accepts such an account of volition as I, for instance, have offered elsewhere,[1] may perhaps find our main result more evident when viewed from the practical side. Will, according to such an account, is on one hand the self-realisation of an idea, but on the other hand it cannot be resolved into any complex of elements existing before the mind. We have in volition a positive experience, which is more than any sensation or idea or any mere set of sensations and ideas with their relations and movements. If you take my state of mind before the volition, followed by the actual satisfaction with its awareness of agency, and if you attempt to confine all this within the limits of what takes place before me in the objective field, the result is failure. You perceive forthwith that in your analysis there is something left out, and that this something is a content which is experienced positively. The felt outgoing of myself and from

[1] MIND, N.S., Nos. 44, 46, 49. *Cf.* Nos. 40, 41, 43.

myself has in short been ignored. And hence comes a consciousness of defect in the object as described, and a desire for its completion. On the other side, since the whole experience is integrally one, the objective side naturally tends to complete itself ideally and to fill itself out from what merely is felt. And the suggestion of a defect thus remedied, when once it has been made, is found so far to satisfy. But I would remind the reader that, neither here nor in what precedes, am I offering a true genetic account of the matter.[1]

In some such manner it however seems possible to reach the idea of immediate experience. That experience we have seen is a positive non-relational non-objective whole of feeling. Within my immediate experience falls everything of which in any sense I am aware, so far at least as I am aware of it. But on the other side it contains distinctions which transcend its immediacy. This my world, of feeling and felt in one, is not to be called "subjective," nor is it to be identified with my self. That would be a mistake at once fundamental and disastrous. Nor is immediate experience to be taken as simply one with any "subliminal" world or any universe of the Unconscious. However continuous it may be with a larger world, my immediate experience falls, as such, strictly within the limits of my finite centre. But again to conclude from this that what falls within these limits is merely myself, would be an error entailing in the end theoretical ruin. The above idea of immediate experience is not intelligible, I would add, in the sense of being explicable; but it is necessary, I would insist, both for psychology and for metaphysics.

Its larger application would go far beyond the scope of this article. Nothing in the end is real but what is felt, and for me nothing in the end is real but that which I feel. To take reality as a relational scheme, no matter whether the relations are "external" or "internal," seems therefore impossible and perhaps even ridiculous. It would cease to be so only if the immediacy of feeling could be shown to be merely relational. On the other side relations in fact do exist and immediacy in fact is transcended. And, just as we cannot explain the possibility of finite centres of feeling, so we cannot explain how this transcendence of feeling is possible. But the fact remains that feeling, while it remains

[1] The genesis of the idea, I should agree, in the main may be called practical. I should presume it to arise when the self is identified with the body, and when we become aware of something experienced within the body which is not the body nor yet things within it or outside it. To set down this experience as being further, like pleasure and pain, non-relational, is of course a step taken only by a later reflexion.

as a constant basis, nevertheless contains a world which in a sense goes beyond itself. And when we seek for a unity which holds together these two aspects of our world, we seem to find given to us nothing but this unity of feeling which itself is transcended. Hence, as I have urged elsewhere, we are driven to postulate a higher form of unity, a form which combines the two aspects neither of which can be excluded. That such a form is given to us directly in any experience[1] I have never pretended. On the other hand against its possibility I have nowhere found a conclusive objection. And because this satisfies our demands, and because nothing but this satisfies them, I therefore conclude that such an idea, so far as it goes, is final and absolute truth. But, however that may be, I trust that the humbler contentions of this article may in their way be useful. I have felt throughout that everything here which I have been able to say, could and should have been somehow put more simply. But if, while so far agreeing with me, the reader is nevertheless led to reflect further on this difficult theme, my main end will have been accomplished. The problem which has occupied us, however sterile and baffling it may appear, threatens, if left unresolved, to bring danger or even theoretical destruction.

[1] Given, that is, adequately and as required. I am not forgetting the claim of, *e.g.*, our æsthetic experience.

III.—PSYCHICAL PROCESS.[1]

By Harold H. Joachim.

§ 1. Two senses of 'Idea' have sometimes been contrasted, and the contrast has been used to mark off the subject-matter of Logic from that of Psychology. In order to bring the problem of the present paper into focus, it will be convenient to retrace this familiar distinction between Idea as *meaning* and Idea as *psychical fact*. A rough outline will serve.

A judgment as 'meaning,' 'significance,' or 'logical content,' is a part of knowledge—so far, at least, as it is true. This 'meaning' is something 'objective,' and common to all sane intelligences.[2] It is universal; independent of particular conditions of time and place, unless they are themselves included in the meaning and thus universalised; and it is freed from the 'psychical setting,' which accompanies the judging of this or that person. The judgment—in this sense of the term—is a complex content, within which we may distinguish contributory elements of meaning as its constituent portions. Any such constituent portion is an 'idea'; and, for our present purpose, may be called distinctively a '*logical* idea'. For the further reflective classification of Logic (with which we are not here concerned) every 'logical idea' falls under one or other of a few types: it is, *e.g.*, a subject or a predicate, an antecedent or a consequent, and so forth. And in the light of another classification (with which we are again not concerned, but which is sometimes ascribed to Metaphysics) every 'logical idea' is—or perhaps we should say 'stands for'—a member of some type or other within a different group. It is (or 'stands for') a substance or an accident, a quality or a relation, a cause or an effect, and so forth.

[1] For the views expressed in the following paper (which was written for the Jowett Society at Oxford during the summer of 1906) I am of course alone responsible. But I gladly take this opportunity of expressing my gratitude to Mr. F. H. Bradley, who read through the manuscript, and made many most valuable suggestions and criticisms.

[2] *I.e.*, if any sane intelligence thinks about the matter, it must think *so* about it.

But every judgment is made by some person, and is thus a *judging*. The judgment, as a judging, is a process. It is an event, or, rather, a succession of events: a section, of a certain length and breadth, taken in the conscious life of the person judging. As occurring at, and through, a determinate time, and as a process 'in' or 'of' an individual mind, it is unique or singular. And its parts or 'steps' (the plurality of succession, which analysis may distinguish within its unity), *quâ* constituents of it, are themselves unique and singular; just as the several events, which constituted the flow of Napoleon's life, are—considered as *this* actual historical process—unique and singular constituents of a unique and singular total event.

The process of judging, as 'in' or 'of' a mind, is called a *psychical* process: and its parts are called *psychical* events or facts, or (sometimes) *ideas*. An *idea*, therefore, in this sense of the term, is a unique and singular 'step' in a unique and singular process. Such 'ideas' are the several changes 'in' or 'of' the individual mind, which constitute (or contribute to constitute) that total flow of consciousness which is the judgment as a judging.

§ 2. For the sake of simplicity, I have spoken only of Judgment. But *mutatis mutandis* the same distinction applies, *e.g.*, to Inference, to Emotion, and to Volition. The inference, as a piece of articulate meaning, is distinct from the inferring as a psychical activity: the pain of parting, or the emotion of love, from the psychical process of experiencing the pain, or of falling and persisting in love. And the processes of volition 'in' the individual agents are distinguished from the subject of moral praise and blame, the will incarnate in character and conduct or in the laws and institutions of a people.

Problems, similar in kind to those which we are to study, arise from the application of the distinction in these regions. But it would be a mistake to extend the scope of an inquiry, which—even if restricted to Judgment—is more than enough to occupy us.

And there is a topic, which may be ruled out at once as irrelevant, however interesting it might be in another connexion. For when 'psychical process' or 'psychical fact' is distinguished as singular and unique from the universal content, the terms 'psychical process and fact' may express not one factor over against another factor within a total experience, but that total experience itself viewed on the side of its existence. Feeling, willing, judging and inferring occur and exist in time and place, and have sever-

ally, in every instance, a determinate and unique position in the complex of events which forms 'the world'. What is known is somebody's knowledge, what is felt and willed is somebody's feeling or willing: and my knowledge, emotion or purpose, whilst embodying a universal content, is also (taken in its entirety as an actual experience) a part of my history. Psychical facts in this sense of the term—like all 'facts'—occupy, each of them, their definite positions in the temporal and spatial order. And, in that sense, they are severally unique and singular, however universal their content. They are studied by the historian, by the writer of biography, and by many novelists. *What exactly* is studied, and *how* the *data* for the study are obtained, is an interesting and difficult problem. But we are not here concerned with it. We do not care *where* and *when* in the world-order a judgment, inference, emotion or volition 'takes place' or 'occurs': nor are we occupied with the description of these phenomena as the unfolding of a personality. We are to examine 'psychical process' in another and more dubious sense. Within the total occurring experience, we are to suppose a distinction to be drawn and a severance to be made. A judgment, as I make it, is my judging. And this, my judging, (so it is supposed) *is* or *involves* some sort of 'process,' or 'mechanism,' or 'happening' *in* or *of* my mind. To *what* does this vague description apply? *What* is this 'psychical process'?

§ 3. If I see a red thing, or hear a chord, I do not see or hear or otherwise apprehend the processes of my seeing or hearing. Whatever those processes may be—whatever the physical and psychical mechanism of vision and hearing —at least they are not *what* I see or hear or apprehend, when I see the red thing or hear the chord. I am not aware of the image on my retina, nor of the rods and cones, nor of my organ of Corti: not aware of them, nor of any change in them, nor of any 'psychical process' (any modification of my sentience) which accompanies—or which may be supposed to accompany—these physical changes. *What* exactly I see or hear—*i.e.*, *what* is 'for me' as the object apprehended—is a problem, which fortunately we need not here investigate further. It does not matter to us at present whether we see 'colour' and hear 'sound,' or whether, *e.g.*, we see wave-lengths of the ether as colour and hear vibrations of the air as sound. All that I am maintaining is this:—When we are seeing or hearing X (colour or sound or vibrations), we do not see or hear or apprehend any process or mechanism—physical or psychical or psycho-physical—which is (or may be) involved in

our seeing or hearing X. We do not, in perceiving, perceive the processes of our own percipience. Whatever these processes may be, they are not something *through perceiving which* we perceive X: nor are they something which we perceive *along with* X. *For us, quâ* perceiving X, they are nothing at all.

This seems so obvious in the case of perception, that I am ashamed to dwell upon it. And it is surely no less obvious in the case of judgment. For if I judge 'Cæsar was a great general' or 'Philosophy is full of intricate problems,' there is something (as we say) 'before' my mind. In the judgment I am analysing and synthesising, and thus apprehending, a complex real. We need not enter into the difficult question as to *what* precisely I am apprehending:—*what, quâ* analysing and reconstructing, *quâ* judging, I have 'before' me. The greatness of Cæsar as a general, or the intricacy of philosophical problems:—these may be treated for our present purpose simply as 'X,' a something real—a complex object—which is 'for me' *quâ* judging. And in judging and thus apprehending X, I neither judge, nor in any way apprehend, along with X, any process of getting, or of having, X before me. The 'psychical process' of judging X is nothing *for me, i.e.* is no part of that which I apprehend in apprehending X. And if the knowledge of X—the judgment meaning X—is conditioned by a process of judging, the conditioning process itself is nothing, of which I (in judging and knowing X) am in any sense aware.

Whatever the process of judging may be, it is not something *through the awareness of which* we are aware of X: nor is it something which we apprehend *along with* the apprehension of X. *For us, quâ* judging and thus apprehending X, the process of that judging is nothing at all.

§ 4. Our apprehension of the real neither includes *for us*, nor is mediated by, the apprehension of any processes of that apprehending. In perceiving or judging, we are not aware of any changes or events 'in' or 'of' our percipient or thinking mind, whether as antecedent conditions or as part-constituents of our perception or judgment. This seems to me certain, and even obvious: and I would not have dwelt upon it, if it were not sometimes forgotten. Since, however, it may be misunderstood, and through misunderstanding disputed, I will try to anticipate a possible objection here, and thus throw this obvious (and somewhat trivial) contention into relief.

"Surely," it may be said, "in the real world, as we apprehend it, there is a factor contributed by the mind. The

world which we perceive, and the world revealed and grasped in judgment and inference, is something from which we cannot eliminate the work of perception and thought. You have made things easy for yourself, by brushing aside the question '*what* is for me *quâ* perceiving or *quâ* judging?' For if you had investigated this problem, you would have found that the subject's psychical constitution and psychical processes—the structure and the functioning of his percipient and his judging mind—are vitally concerned in that apprehended real which you so conveniently designated as 'X'."

The reply to this criticism is, I think, simple. Whether the critic's philosophy is sound or not—and I am not saying that it is unsound—his objection is irrelevant. For *suppose* that X—*what* we apprehend *quâ* perceiving or *quâ* judging—is through and through conditioned and characterised by our psychical character and our psychical processes, my position is still untouched. For what I have denied is (i) that we apprehend those processes and *through our awareness of them* apprehend X: and (ii) that we are *aware of them* as part of X which we are apprehending. And this denial can still be maintained. For let us call the psychical conditions, which are supposed to contribute to X, 'Y'. Then, the objector urges "X—if you will reflect upon it—involves Y". But I am maintaining that Y—whether 'involved' in X or not—is nothing, of which the subject, *quâ* apprehending X, is aware.

The irrelevance of the objection, in fact, is concealed by the vagueness of the terms. One might agree with the objector that the "structure and functioning of the percipient and judging mind are vitally concerned in the apprehended real," and yet deny that the judging and perceiving mind apprehended its own structure and functioning *as such*, in apprehending the real: just as one might admit that all clear thinking must conform to the Law of Contradiction, without holding that the thinker must be aware of that Law as a principle to guide his thinking, or as part and parcel of what he thinks.

§ 5. *For whom*, then, is the 'psychical process,' which we have assumed to be involved in the making of a judgment? *Who* is aware of it, and *of what* precisely is he aware? That is the next question which must be asked, and the answer is a painful one. I believe—to put the matter at once and brutally—that no one is or can be aware of 'psychical process' in the sense of the phrase in which we have been taking it. There is no such thing: or at least if there is, it cannot be known. And though undoubtedly we are aware

of something, *that*—whatever we may choose to call it—is not what we set out to discover.

Let me try to explain.

If *I*—the judging subject—subsequently reflect upon my judgment, I may detect and disengage and bring 'before' my mind certain incidents and changes, which I take to have been the 'psychical process' of the judging. In the same way, *you*—the psychologist—may reflect on my judgment as a complex incident in my mental history: and, in studying the conditions and the constituent parts of this incident, you may suppose yourself to be studying 'the psychical process' which was 'my judging'.

You and I are, in such a case, studying a new 'real'. A new object is 'before' our apprehension and judgment, which we may call 'Q'. And our judgments, in which we apprehend Q, are, as judgings, 'psychical processes' 'in' or 'of' our minds. For the original distinction, between judgment as *universal meaning* and judging as *unique and singular psychical process*,[1] will apply to every judgment, if it applies to any. In virtue of that distinction, we looked for a 'psychical process' in the judgment meaning X: and we found a judgment meaning Q. On the same principle, we must look for a 'psychical process' in the judgment meaning Q: and we shall find a judgment meaning Z. We are in fact committed to an infinite pursuit of that which, by the very terms of its conception, cannot be caught or 'apprehended,' and refuses to stand over against us as an object of our awareness. At every step of the pursuit, the 'psychical process'—*the process of apprehending*—eludes our grasp and leaves us in possession of an *object of apprehension*. What we set out to study, was—as we imagined—the living process of a judging mind: the unique and singular series of changes which is that mind's thinking. In making this 'psychical process' an object of study, we have disengaged it from the mind whose process it was. We have removed it from the atmosphere in which it drew the breath of its life: and 'it'—the real object of our search—has ceased to be. And whilst we suppose ourselves to have *it* 'before us,' our study is fixed upon a lay figure, a thing of straw and stuffing, a caricature of the living process. *That* has slipped away:—only to revive, in a mocking reduplication of itself, as the process of our studying.

§ 6. There is a well-known form of self-hypnotism by which, if we ponder on even the commonest words of our

[1] Above, § 1.

vocabulary, we shall doubt their spelling, or their customary meaning, or perhaps doubt in the end whether they are significant sounds at all. Similarly, there is a kind of dialectical reflexion, which brings the most elementary distinctions—the most solid and familiar facts—into a whirlpool of movement. *There*, everything proves self-contradictory, and, turning confusedly into everything else, crumbles away into nothing.

Now this—it may be suggested—is what is happening in the present case. For 'psychical process' and 'psychical fact' may perhaps be ill-chosen expressions: but the phenomena, which they indicate, are real, and no amount of dialectical criticism can remove them from the universe. Prove that a 'psychical process' is, by the very terms of its conception, neither 'for' the subject nor 'for' anyone else. Prove that 'to be itself' is incompatible with its being known: and that 'to be known' conflicts with its being *that* which it is to be known as being. The contradiction lies in the confusion of your thinking, and does not touch the facts. The facts are there, solid and unyielding and unaffected by the dialectical movement. For can it be denied that there is a sense in which judgments 'occur'? Or that their 'occurrence' (the judging) is a process of thinking and a functioning of the mind? Or that the phenomena thus indicated—their conditions and laws—are possible objects of systematic study, forming indeed part of the subject-matter of an actual science?

Undoubtedly the facts—*some* facts, at least—are there, and undoubtedly they are studied. But it is no empty question to ask *what* are these facts, and *what precisely* is studied? And it was against one answer to this question that we were arguing. For the 'facts' were characterised (in contrast to the objective and universal meanings) as unique and singular processes of the individual minds: and these—the unique flow of an individual consciousness, and its unique parts or constituent 'ideas'—were to be the objects of study. Such a psychical process, and such ideas (we argued) are nothing: or if they are anything, at least they are not possible objects of knowledge for anyone.

"In that case," it will be retorted, "your discussion is waste of time. You have been forcing open doors, and tilting at windmills. For the distinction itself is harmless and indisputable, if rightly understood: whilst the abuse of it, which you have been attacking, is nowhere to be found.

"In the judgment 'Cæsar was a great general' there is affirmed a complex meaning. And this affirmation of mean-

ing, as common and universal, as the meeting-ground of all intelligences, as true or false, is a piece of knowledge or of error, and comes under the study of the logician. But the apprehending and affirming of the meaning is something singular and unique: and the judgment is in this sense a judging, an operation severally performed by each intelligence. If I am to judge, I must bring the complex meaning before my mind, and affirm the cohesion of its parts: and in so doing, I must pass through complicated 'psychical processes'. I must apprehend the several constituents—the 'logical ideas,' *e.g.*, *Cæsar*, *General*, *Great*—and I must apprehend the manner of their cohesion, and affirm them in their cohesion. All this—*as it actually occurs*—is a unique and singular process, inseparable from the mind whose process it is. But it nevertheless exhibits a certain general character, conforms to certain conditions and laws, and exemplifies certain typical dispositions and functions of mind. This—the common character, the general conditions, the typical functions, involved in the singular processes—is the subject-matter of Psychology. For every science must in a sense reflect upon the singular and unique. But every science disentangles, from this material of its study, the common nature and the universal laws which are, as it were, the *substance* of the singular phenomena. In this respect the procedure of Psychology is the same in principle as that of other sciences, and is fully justified by its results. For it has analysed this singular process, whereby the individual mind transcends the limits of its singularity and grasps what is universal. It has discovered and named a world of distinctions within the seemingly simple phenomena, from which its investigation started. Thus it has distinguished different types of *ideas*, *images*, or *symbols* as constituent 'steps' in the processes of the different types of mind, or of the same mind as it thinks of different types of thing. It has laid bare the conditions which determine the 'association' of these 'ideas,' the different principles of connexion which operate in the psychical mechanism. It has distinguished, named and described the typical functions of the mind as displayed in the more complex structures—the 'set pieces'—of its self-expression, in *imagination*, *memory*, *recollection*, *inference* and so forth. And by tracing the principles of interrelation, the affiliation and evolution of the different mental functions and processes and structures, it has brought the whole to order and system."

§ 7. The above, I am well aware, is a most inadequate outline of the work achieved by Psychology in a small corner

of its field: but with that work we are not directly concerned. The appeal to it is irrelevant, or perhaps an attempt to prejudice our inquiry. However much we may admire the success of Psychology, we still have our problem to reckon with. For the magnificence of a superstructure cannot of itself guarantee the solidity of its foundations: and we do not even know that these 'psychical processes' *are* the foundations of Psychology. They may be neither the materials from which it starts, nor the foundations of its building, but confusions and misconceptions which have no place in any science. Or, if indeed some psychologists have built upon them, and they prove unstable, Psychology can be trusted to deal with the situation, to repudiate and, if necessary, to reconstruct.

Only one fresh point has been urged in the above defence of 'psychical processes,' if we eliminate the bare assertion that they are 'solid facts' and the appeal to the results of Psychology. A severance is still made between *what* the mind thinks and the process of its thinking. *What* it thinks is a logical content, true or false, knowledge or error; and is relegated to Logic. The 'solid facts,' which are to remain, are certain processes of thinking and certain 'steps' in those processes. These, *as actual*, are 'singular and unique,' and thus (in accordance with the original distinction) sharply contrasted with the universal and common meaning, the 'logical content' and 'logical ideas'. But the 'singular and unique,' we are *now* assured, is merely the starting-point of an inquiry, which (as a 'science') studies its 'substance'—its common character and typical forms, its general laws and conditions.

Now, *in what sense* are these processes 'singular and unique'? On this, as it seems to me, the whole matter turns. For there is a sense in which all phenomena are 'singular and unique'. All phenomena, we may say, as they actually occur, are severally fixed in determinate positions within a complex of relations. And each of them is particularised by reflecting, with an 'emphasis' differentiated by that position, the inexhaustible detail which constitutes their common setting.[1] But the 'psychical processes' are 'singular and unique' in a further sense. For any actual thinking is, as a 'psychical process,' inseparable from the individual mind. It is 'unique and singular' not merely or primarily because, as occupying a determinate position within a complex system, it reflects the inexhaustible variety of its

[1] *Cf.* above, § 2.

setting *from this and not from that* angle. Its 'unique singularity' is the privacy of the 'individual mind': a privacy of exclusive 'being-for-self,' which is assumed to constitute a mind's 'individuality,' and to cover all its inner modifications. What is 'singular and unique' in this sense cannot be 'given' or 'apprehended,' and cannot serve as the material from which a science disentangles universal laws or the typical forms of a common nature. Its very being is to be inaccessible. For no curious observer can draw the curtains of another's mind and peep at its inner workings: and not even the judging subject himself can here act the part of Paul Pry, observing the secret processes of his own judging. Such psychical process is so singular that it eludes every one's grasp and baffles all description. It is so unique, that one may doubt whether it occurs even once.

§ 8. At the risk of insisting on the obvious, I will illustrate this distinction between the facts, which are *data* for scientific investigation, and the supposed 'facts of mind'. We are to assume—rightly or wrongly—that there is an 'individual mind' *of* or *in* which these processes are: for without this assumption the whole position vanishes. Suppose, then, the mind were an inorganic thing—a piece of iron, *e.g.*—whose behaviour under certain chemical conditions we wished to study. *This* piece of iron is unique and singular, and different from every other thing in the universe. But its unique singularity is not a being-for-itself, an inner privacy of self-feeling. Even if we imagine it to enjoy an exclusive individuality of this kind—an individuality analogous to that which we ascribe to ourselves and, with more hesitation, to the animals and perhaps to the plants—no man of science, no chemist, biologist or botanist, would regard such recesses of incommunicable being as objects of study, or regret his inability to enter into them. And if this piece of iron is 'uniquely singular,' *quâ this* determinate reflexion of an inexhaustible setting, it is not *so* that we observe it, when we make it a starting-point of chemical inquiry, nor *as such* that Chemistry endeavours to know it. We see, or infer by the aid of experiment, a succession of changes, of displacements of constituent particles, culminating in a determinate structural rearrangement. *What* we see, may be unique and singular: but we do not see it in its unique singularity. *That* it is unique and singular, in the sense that, if the universe were exhaustively known, *it* would be exhaustively known too, and would be revealed as an individual constituent in the individual system which is the universe: this may or may not be the case, but it does not concern

our chemical inquiry. *For that* a more limited vision is sufficient. The piece of iron and its processes, as *data* for Chemistry, are a limited group of properties and changes, observed in the rough, in a general and typical form, without that minute differentiation which, as *these* unique and singular facts, they no doubt possess. We observe just so much, and just so precisely, as is required for the formulation of the law: "Iron (such and such a chemical element) under such and such conditions combines with such and such other elements to form such and such a compound: and the process in, or of, the elements is such and such a succession of displacements culminating in such and such a structural rearrangement".

And if the mind were a piece of mechanism, we should have a *datum* before us, a perceptible thing, with a typical structure and with laws of its working to be ascertained by observation and inference. Even if we had nothing before us but *this* 'unique and singular' watch, and were ignorant of the purpose determining the material, shape and adjustment of its parts, we should not necessarily be at a loss. For, if it were set going, part would be seen acting on part, and a series of displacements occurring. And if we hesitated to infer "such and such an ordered arrangement of such and such materials results in such and such a regular movement of the hands and is intended to mark the time," our hesitation would not be due to the 'unique singularity' of the *datum*. We might, in our ignorance, hesitate to infer the actualisation of such a purpose anywhere. But if we accepted it here, we should not hesitate to generalise; or rather, in accepting it, we should already have generalised.

Kant, it will be remembered, proposes[1] to 'set the mind going' in order to ascertain its 'faculties': the 'play' of the mechanism is to reveal the nature of its parts and the principles of their adjustment. But he meant that the nature of mind is manifested in what it does: that we can infer its distinctive 'powers,' only if we set it at work judging, feeling and willing, and study the results. He never supposed that the "inner psychical process" could be separated from the meaning apprehended, or from the content felt or willed, as the movements within the watch are separable from the revolution of the hands on the face. And he certainly did not suggest that by observing the mental machinery at work—by looking (so to say) at the wheels going round in

[1] *Cf. e.g., Kr. d. r. V.*, 2nd edit., p. 91; *cf.* also *Kr. d. Urtheilskraft*, Introd., p. xxxi.

the mind—one could formulate a theory of the typical forms and general conditions of such "psychical process".

Now, I am not here questioning whether, if we could apprehend the psychical process of any one individual mind, we should be entitled to generalise (or should perhaps already have generalised) from our *data*. I am maintaining simply that the supposed *data* are not forthcoming. The 'psychical process of an individual mind,' if such there be, is *ex vi terminorum*, not capable of being 'given' to that mind itself, or to any other mind. And if the psychologist attains to knowledge of the nature and functioning of mind, the knowledge which he acquires, and his method of acquiring it, must be other than we have been supposing.

§ 9. We talk of ideas 'occurring to us,' 'flashing through our mind,' being 'fixed in our head'. 'Trains of ideas' rush through consciousness, impressions 'crowd' upon us, and images 'jostle' one another, or are 'stored,' in our memory. We naturally lapse into the coarser and more familiar categories, and should be indignant if our metaphors were taken seriously. The mind, we are all agreed, if it is anything at all, is not an extended whole. It is not—not even from 'one point of view'—a one containing a plurality in spatial juxtaposition, nor a place successively occupied by a shifting manifold. It is one: but the unity is changing, and changing *so* that the changes are modes of the unity. It is a one-of-many: but the plurality, whether simultaneous or successive, is phases of the one, and the one is 'one' only in these its phases or 'inflexions'.

But if this is what we mean by a 'mind,' a mind is not that *in* or *of* which processes are, nor that which owns variety and change as its properties. It is not a 'thing' or a 'substance,' but essentially itself a process. It is itself variety and change: but the variety and the change are the modes and inflexions of a one, which is 'one' only in its inflexions, and is *for itself* only as reflected upon itself in them. This is what we are for ourselves at the most elementary level at which we experience 'ourselves' at all:—at the level of 'self-feeling'. *There* our 'self' is a 'scale' of feelings; a unity of feeling of which the many feelings are the inflexions, and a unity which is 'one for itself' (a 'feeling of a self') as returning upon itself throughout the plurality. And here, it may be said, in this unity reflected upon itself in its inflexions, we have the type of what is called 'psychical process' and the clue to the 'psychical process' of judging. For if the 'inflexions' are modifications of a unity of awareness, if 'modes of awareness' are sub-

stituted for 'modes of feeling,' the process is the mind *quâ* judging: and we have found the object of our search. The mind in judging apprehends X: but, *quâ* judging, the mind is an awareness differentiated through many modes, and 'one' for itself by reflexion upon itself throughout these inflexions. In this differentiated and reflected unity of awareness, the mind *is* Y, the process of judging whereby it apprehends X. The mind, as we rightly insisted,[1] is not aware of Y as that through which it apprehends X, nor as part of X. But the mind, in apprehending X, *is* Y: and Y is a differentiated unity of awareness.

Before, however, we congratulate ourselves on our success, it will be as well to consider what we have discovered. An 'awareness' is essentially an awareness of something: and 'modes of awareness' are distinguished as awarenesses of different things. No doubt the expression is a vague one: and we speak, *e.g.*, of 'feeling' and 'thinking' as different 'modes of awareness'. We are then laying stress primarily on the *form* of apprehension: but even here (if we will reflect) the difference of the 'form' conditions, and is conditioned by, the difference in the 'matter' apprehended. We may feel the beauty of a work of art: and on the other hand, at a different level of experience, in a different 'form' or 'mode' of awareness, we may attain to an intelligent or 'thinking' appreciation of it. But the two experiences are different through and through. And nothing but confusion of mind and looseness of language could lead us to suppose that the object apprehended is 'the same,' and that the difference lies solely in the form of apprehending.

Nor are the 'steps' of the psychical process of judging '*modes* of awareness' in this more general sense. The 'awareness' in question is a unity of thinking, and its modes are 'inflexions' of it. As such, they are different thoughts, *i.e.*, *thoughts of different things*: for thus, and thus only, is thought differentiated.

So the new phrases conceal after all no very startling discovery, and our results may be stated more simply as follows.

The mind apprehends many constituent elements as contributing to a single meaning. This single meaning, developing for the mind throughout the many constituents which it apprehends, is, in the fulness of its development, X—that which, in its judgment, the mind affirms and knows. The many constituents, through which the meaning develops,

[1] Above, §§ 3, 4.

are different objects of thought to the mind, and thus 'differences of its thought' or different 'modes' of its apprehending. And as returning upon itself through the modifications of its thought, the mind is *for itself* a judging process, *i.e.*, is aware that it is judging and knowing X.

If we compare this account with the description with which we began[1] we may say *either* that the distinction between 'process of apprehending' and 'object apprehended' has now, to all intents and purposes, vanished: *or* that we have introduced the notion of 'process' into our conception of the 'object' apprehended. For what we are now describing as Y—the process of judging X—is X itself, with the reservation that X, in its development and in its completeness, is 'for the mind'. The reservation is made: but there is no attempt to explain or to analyse the 'apprehending' of the mind, or that aspect of X in which it is 'for' the mind. The whole emphasis is now laid on the differences within the development of X. For X is now described as the emergence of a single meaning, developing through a succession of different contributory meanings. The 'steps' in this 'process' are, in fact, 'presentations' to a mind, different objects of thought. And perhaps it is these—or some of these—which the psychologist discriminates as 'Images,' 'Ideas' or 'Symbols'. He is describing certain kinds of object which 'pass before the mind,' the differences in the order of their passing and the conditions of their grouping. And the phenomena thus described are without doubt important subjects of study. In certain experiences—*e.g.*, in Reverie—they form perhaps *the whole* of that which we apprehend: and in many other experiences our primary and main object of apprehension is complicated by the mediation of these as contributory elements. But these Ideas, Images and Symbols, and their grouping and interrelations, *if we retain the distinction between process of apprehending and object apprehended*, fall always on the latter side of the division: and thus, in describing them, the psychologist is doing the work of the logician. He is studying a portion of the subject-matter of Logic, mapping out a few of the districts within the logician's territory. And he is doing so imperfectly, in so far as he does not recognise fully *what* he is doing. He is studying phenomena essentially subsidiary to the more complicated phenomena, which he assigns to Logic. For Reverie, Memory, Imagination, etc., are rudimentary forms of knowledge, 'modes of thinking'

[1] § 1.

in which we indirectly and imperfectly apprehend the real. And if they are to be thoroughly understood, they must be viewed as Logic would view them, *viz.*, in their relationship to the more developed forms in which the 'logical' endeavour—the endeavour to know—is more fully explicit and conscious.

§ 10. "But after all," it will be said, "we *do* think 'in' words, or ideas, or images, 'in' symbols or schemata of some kind. If we recall an absent friend, or if we think of a universal meaning, images unique and detailed pass before our mind, and mediate our thought. The succession of such unique images 'in'—or, if you prefer it, 'before'—our mind, is the process of recollecting or conceiving: and the laws of their succession and association, together with the principles of their representation of the 'meaning,' are the subject-matter of Psychology. Psychical processes and functions—Reverie, *e.g.*, Recollection, Conceiving and Judging—doubtless present problems to Logic, and Psychology cannot exhaust their whole significance. But Psychology studies a determinate aspect of such facts, and its description possesses a determinate and independent value."

Now the statement that we think 'in' ideas or images or symbols is ambiguous. (1) We should all agree that thought is inseparably one with its determinate inner expression: that it is embodied and incarnate, and that 'pure thought'—thought *absolutely* unexpressed and indeterminate—is nonsense. But this truth, or truism, is irrelevant: nor is it well expressed in the statement that "we think *in* ideas". For that invites misunderstanding. It suggests the absurdity of a naked and shivering thought, waiting to select (from the wardrobe of the mind) the clothes, in which it may make a decent appearance. We do not 'think in ideas'. Ideas are nothing unless quick with thought: and *thus*, they are the incarnate life, the besouled body, which *is* our thought. (2) And if it is meant that always—or, at least, often—we apprehend our main object mediately through the apprehension of something else, the statement, however true, is nothing to the point. For if we study the secondary or 'mediating' object, we are still not studying the *process of apprehending* in any distinctive sense, which would entitle us to assign our work to a distinct science. We are studying one kind and one level of thought, *i.e.*, of 'meaning' for a mind—and our study is part and parcel of Logic. There need be no quarrel about names: and provided we recognise the character of the science, and that it is *one*, we need not dispute whether it should be *called* Logic or Psychology.

And though we cannot here profess to explain the character of the science, we may indicate it by saying that it studies the developing and developed meaning which is significant thought, and does *not* study 'process of apprehending' or 'object apprehended' in severance from one another.

(3) But the statement that we 'think in ideas' means, we may suspect, neither that our thought is concrete and incarnate, nor that in some experiences ideas and images are the objects apprehended. It means that we apprehend the real through a veil of our own ideas. And this veil has an inner and an outer side, and fulfils a double function. For the ideas, images, or symbols are *both* states of our mind, modes of our own apprehending consciousness, and so unique and singular: *and also* objects apprehended, symbolic of objects other than our own states, presentative or mediative of the 'real'.

But the veil on its outer side (the ideas as objects apprehended) clearly belongs to Logic: and on its inner side (the ideas as modes of consciousness) it is *possibly* 'for' the thinker himself, but *assuredly* 'for' no other mind.

The whole theory, indeed, if I have rightly understood it, is radically false, and even dangerous. For we have a succession of modes of consciousness, the unique and singular steps in the unique and singular process which is our apprehending. The phases of this process, as phases of apprehending, are reflected on themselves: *i.e.*, the process is, through and through, an awareness with itself for its object. Its 'steps' are at one stroke phases of awareness, and that of which those phases are aware. And if this be so, by what possible method are we ever to get beyond our own self-feeling? *What* we are aware of, is, and remains to all eternity, a phase of our own awareness; and it cannot even be awareness of something *as our own awareness*, for that would imply distinction from something not our own, not a phase of our self.

On the other hand, if we emphasise the other moment in the see-saw of the theory, we have a succession of ideas, which, *qua* objects apprehended, are over against, and distinct from, the apprehending. The apprehending is the pure white light of inner vision, before which the variegated show of 'images' is displayed. The process of judging is the procession of changing objects passing before the unchanging 'eye' of the mind. And yet this procession is somehow *also* a series of mental states. It passes 'through' the mind, perhaps, or occurs 'within' it, and its members are 'ideas' or 'psychical facts'. The name, aided by the

magic of this 'through' and 'within,' completes our delusion. We suppose that 'objects,' which *as ideas* pass 'through' the mind or *as psychical facts* occur 'within' it, are more akin to thinking than 'the real,' the 'X,' the apprehending of which was to be explained. But if our awareness of X requires explanation, the interposition of an 'idea' between X and the mind is of no assistance. For if the 'idea' is apprehended, *its* apprehension is no whit more intelligible than that of X. Whilst if the 'idea' is not an object apprehended, but a phase of apprehending, it is the idea which apprehends X; and *that* has to be explained. And if, finally, the idea is *both* apprehending *and* apprehended, we are fairly committed to a theory destructive of all knowledge and all reality—to subjective Idealism in its purest and most paradoxical form.

§ 11. Let me briefly recapitulate. I began by setting out a common distinction between 'logical content' as universal and objective, and 'psychical process' as unique and singular and peculiar to the individual mind (§ 1).

This distinction may be used in a sense with which I have no quarrel, or with which at least I am not at present concerned. For it may be meant merely that the apprehended meaning *as a whole* is, from one point of view, some individual subject's experience, and considered *thus* is 'psychical process'; whilst, taken in abstraction from this its occurrence, it is 'logical content'. That there is 'psychical process' in this sense is no doubt true: the real *quâ* known is known by somebody, and may so far be considered as part of that somebody's history. The same applies, *mutatis mutandis*, to the real *quâ* willed and *quâ* felt. Many novelists (Balzac, *e.g.*, or Henry James), many historians and writers of biography may be said to study and describe 'psychical processes' and 'psychical facts' in this sense of the term. Exactly what they are describing, and how they get their *data*, are interesting and difficult problems: but I am not here attempting to raise them, and I ruled out this sense of 'psychical process' in § 2.

The distinction, however, which was set out in § 1, may be used in a totally different way. It may mean to sever, *within my knowing X*, the *X known* from my *knowing*. And I proceeded to inquire what a 'psychical process of judging,' characterised in terms of the distinction *thus* used, could be. I concluded that if, within my knowing X, the process of knowing is severed from the content known: and if the 'psychical process,' which the distinction contrasts with the logical content, is such a severed process of knowing:—then

'psychical process' is either nothing at all, or at any rate nothing which I or anybody else can study (§§ 3-5).

In § 6 we reviewed the situation. We supposed the severance between object known and process of knowing still to be maintained. But it was suggested that nevertheless such 'psychical processes' might be the *data* of a scientific inquiry. All sciences, it was urged, start from facts which are singular and unique: and the psychologist might use these uniquely-singular 'psychical processes' as the *data* from which to begin his investigations.

We examined this defence in §§ 7, 8. We endeavoured to explain in what sense the facts of science are singular and unique, and why *their* 'unique singularity' does not interfere with the scientific study of them: whilst, on the other hand, the 'unique singularity,' which was supposed to characterise 'psychical processes,' would effectually prevent any apprehension of them as *data* for a science. 'Psychical facts,' we might say, as so interpreted, are a contradiction in terms: for *quâ* 'psychical' they cannot be 'facts,' and *quâ* 'facts' they have lost the characteristic in virtue of which they were 'psychical'.

In § 9 we tried to develop the contrast between 'perceptible things' and a 'mind' (a contrast sometimes obscured by the metaphors of popular phraseology), and, on the basis of this contrast, we suggested a new description of the 'process of judging'. But we found that, in this new way of looking at the matter, the distinction between 'psychical process of judging' and 'content judged' vanishes altogether: or, if it is in any sense retained, the whole subject-matter of study falls on the side of content. And in place of two sciences, we have but one—a more concrete science of Logic.

Finally, in § 10, we considered an appeal to our common sense, the appeal that "clearly we *do* think in ideas". We exposed the ambiguity of the phrase; and we showed that it does not express any facts, which would support the conception of psychical process attacked in our preceding arguments.

§ 12. This paper has moved within very narrow limits, and its upshot is 'much cry and little wool'. It has criticised conceptions, which few people seriously hold, and which perhaps no one would willingly acknowledge. Yet these 'conceptions'—if confusions of this kind deserve the name—seem to me to lurk in much current philosophy, and to wander at large in popular thought. And if here I am mistaken, and am judging others by the frailties which I detect in my own thinking: if no one but myself is ever in

danger of sinking into this swamp of confusion: at least I may hope to provoke discussion, and to be lifted by criticism into the purer air and on to the firmer ground, where more fortunate thinkers are accustomed to move.

Let me, in conclusion, venture to make a suggestion. It has sometimes been supposed, to speak broadly and in the rough, that the psychologist studies the processes and functions of consciousness, the elements of mind and the laws of its mechanism. He reflects upon his own thinking, feeling and willing, upon that of other persons, and, so far as it is possible, upon that of the animals. And he may thus attain to a systematic exposition of the general nature of mind, and of the stages through which it necessarily passes in the course of its evolution. Sometimes (if report is to be believed) the prospect of this attainment has proved too much for the sanity of the psychologist: and Psychology, no longer content with the position of a 'special science,' expands into the *scientia scientiarum*, which subordinates to itself all philosophy. For ideals of art and conduct, religious beliefs and metaphysical theories: what are these but inevitable products of the mechanism of mind at certain levels of its development? And so, in this nightmare of a theory, philosophy and all its branches—and, I presume, science as well, and psychological science into the bargain—will appear 'in their right place' as corollaries and applications of Psychology.

Now I would suggest that Psychology should begin, so to say, at the other end, following the example which Plato set in the *Republic*, and which Hegel fulfilled. The personality of the moral agent is revealed in the moral system, in the social fabric, which it makes and sustains. The personality of the thinker—the nature and functions of mind as cognitive—is 'writ large' in knowledge. And mind as emotional is broadly expressed in art and religion. In Art and Morality, in Religion and Knowledge, the nature and functions of mind are plain to read: and from the study of them, the study of mind should start. Such a Psychology would be essentially part of Metaphysics. For its subject-matter would be the most developed and most significant manifestations of the real:—mind incarnate in the universe at the level and in the forms of its self-conscious expression.

IV.—A MODERN BASIS FOR EDUCATIONAL THEORY.

By W. H. Winch.

I. Introduction.

Persons who "rush in where angels fear to tread" are frequently described by an epithet which is uneuphonic and contemptuous. The proverb is an impressive one, and it was only when I reflected that, after all, angels, being probably indifferent to educational theory, would have neither fears nor hopes on the matter, that I mustered courage to proceed. For I was painfully aware that since the dawn of civilisation —and there is no reason to suppose that even the cave-men were unanimous—educational theorists have been split up into parties, each loving its own ideal of education more or less fervently, each hating, as worse than no education at all, the ideal of the opposing theorist. Glance through such a book as Compayré's *History of Pedagogy*. There is a kind of sea-saw through the ages: one educationist puts forward a series of opinions and recommendations which the next one despises and contradicts.

But that was a long time ago. Is that the case to-day? Listen to a discussion between a disciple of Herbart and a disciple of Froebel. Take the prevailing educational doctrine at any three or four of our Universities, say at London, Oxford, and Edinburgh, and you will find grave differences, even of the very fundamentals of educational theory.

But, having decided to try to establish a basis, or rather, to indicate how a basis may be reached, one may first be required to justify the possibility of the accomplishment of his task. It is not enough for a philosopher to know something; he must give the ground on which his knowledge is based; indeed, he may be required to go further, and demonstrate the possibility of anybody knowing anything at all. But perhaps 'anybody' is too sweeping; the critic is always knowledgeful *ex officio*.

But I am not now going as far as that; I shall be content with a much less comprehensive demonstration. Demon-

stration, in sooth, it will hardly be; since I have confessed at the outset that even a superficial survey of the educational world of to-day reveals just the same conflict of whirling words, just the same old controversies, just the same confidence in party as ever before. The names have changed, the parties persist.

How can we hope to escape from the quarrels of the ages? "You have, yourself," my critic might say, "in a cursory but hopeless chapter,[1] pointed out that discussion is not likely to end educational disputes; and that, whilst such words as liberal and conservative, idealist and realist, continue to have meaning, there can be no uniformity of educational theory."

We cannot entirely ignore an answer not given quite so frequently as formerly in reasoned treatises, but still vitally operative in the teaching world. "Back to the master," is the cry. It is not, of course, always the same master; but, as each group acknowledges only one master, there is no confusion in the minds of those who use the words. Still the answer does not afford a basis for general agreement.

Now I neither wish to argue that this worship of the masters of the past is due to an especial endowment of original sin, nor to glorify the spirit of progress, nor to talk about the heresy of looking backwards. I know how popular reform is just now, even with the conservative party. All that powerful sentiment which, in England at present, is enlisted on the side of change I definitely refuse to avail myself of. But I oppose the attitude of mind expressed in this hero worship just as I do that of party worship; and for the same reason: briefly, this,—that no adequate separation is made of ideal from fact; hope and evidence are confounded together. We see frequently, amongst even the better informed writings of the press, such sentences about education as, "we wish the children to be taught cookery at school so that they may make good housewives when they grow up". Any one who suggests that cookery is out of place in schools is at once set down as a person who decries marriage, despises the family, and rejoices in a falling birth-rate. However, domestic teaching in schools has now passed beyond the range of controversy, and I, for one, am very glad that it is so; it is the method of argument of which I complain.

And it is not only in the newspaper press that this confusion reigns. Let us take a still undecided and more topical case. Acute discussion is now proceeding as to the need for more

[1] Winch, *Problems in Education*, chap. i., 1900.

manual training in elementary schools. A large party of objectors say that the intention of its promoters is to keep the children of the poor in their places, that is, in the workshop. The argument is a little confused, because they are not there now; but we know what is meant. Its promoters say that their views are wholly educational. Some assert that the brain, whether of the prospective labourer, artisan, litterateur, or statesman, is a temple not made without hands —a profound truth. Others go further and assert that motor work "develops brain-centres as nothing else does"—meaning "better than any other form of mental work". 'Brain centres' is a little vague; it would be better to specify which; but the ideal is clear enough. Obviously, on this view, we ought all to acquire some proficiency in hand work. The difficulties begin to arise when one asks for the facts on which this ideal is supposed to be based. One finds, if one asks for evidence which will stand psychological and statistical criticism, that one is at once set down as an opponent of manual training.

And when we turn to the psychological (?) reasons given for the study of languages, we get confusion even worse confounded. Ideals and facts are hopelessly jumbled. Prof. Thorndike, in his *Educational Psychology*, has pilloried, once for all let us hope, many instances of such confusions of thought. One writer quoted says that the study of foreign languages "fibres the mind". If you denied this, he would doubtless say that you preferred a mind that was not fibred; but, perhaps, at this point, the absurdity of his own statement might strike him. Yes, that is American, but we can match it on our side. A recent Scotch Professor of Education has improved even on this. A certain school exercise, he said, "paralysed the mental powers and granulated the fibres of the brain". This seemed, indeed, a striking contribution to the correlation of mind and body. There was no evidence for it, but the teacher who disliked the exercise would be glad to learn, on a Professor's authority, that it did something definitely unpleasant to his brain. Mr. M. W. Keatinge, in a paper recently read to the British Psychological Society, has added to this list of confusions a few choice specimens from English orators and publicists. Everywhere it appears that men are disputing on questions of ideal and jumbling them up with questions of fact. What hope then is there of a common basis for educational theory, when the educational world is thus arrayed in hostile camps, in which ideal opposes ideal and facts are the very sport of hope?

And even supposing, as indeed is the case, that some agree-

ment is being reached as to what subjects shall be taught in schools, we still have the question before us, How much of each? And the old debates break out anew. As a very modern instance—let me recall how much I was impressed in American High Schools by the veiled antagonism between the biological and physical departments of science. Greek has largely gone, Latin is going; science has won its victory, but the conquerors are quarrelling among themselves. Humanism versus Naturalism is a perennial dispute, and it breaks forth anew within the ranks of science itself.

Do I suppose, then, that, one day, men will all have the same ideals? Expressly, I do not. That is not even true of China—our object-lesson of a stationary state. Nor do I think it will ever be so, even in the last feeble falterings of a nation tottering downwards to extinction. How then, having different ideals, can we hope for a science of education? Is it even the proper task for the educationist to try to make our ideals for us? Or should he content himself with telling us, if we ask him—which we do not always do—which are the best methods by which to achieve our ends? Is the science of education to be nothing more than a basis for an improved school method?

At this point I shall ask my reader's patience, because I shall set out by admitting the great strength of the case of those who answer the last question in the affirmative. We must admit that our ideals of education largely depend upon our ideals of life. And these are not primarily determined by the educationist; they are determined for us: the journalist, the politician, the novelist, the preacher, the poet, the moralist and the philosopher, in descending order of magnitude, leave but little influence for the educationist. Perhaps, as this is a Journal of Philosophy, a few words ought to be said about the position of the philosopher—at the bottom of the list. I believe that Philosophy will shake off its apparent indifference to the transitory and practical—it is even now doing so; and I am hoping to see some day the big generalisations which affect educational hopes and fears taught to teachers by those who are philosophers. This article, however, is not a discussion of the relation between education and philosophy. To those who are keen on that question, I would commend Mr. Dumville's article on the subject in the *Proceedings of the Aristotelian Society*, 1906. Of one thing I feel fairly sure—that no one competently trained in modern philosophical schools could teach the absurdities now so often current under the guise of educational theories. Do I hope for agreement? No, but I do hope for a rational survey of

opposed systems, whichever (if one must be chosen) is finally espoused by the student and teacher. It was not, however, to reach agreement through philosophy that I set out in this paper. Those of us who may be philosophers must agree more closely than we do at present in the precision of our differences.

At this point an opponent might urge, "But ideals, you say, are largely beyond the educationist. Is it not, therefore, his duty to confine himself to methods; does not your own argument show it to be so?"

II. Quantitative Research and School Method.

My first contention was that we should, if we wished for progress in educational theory, most carefully separate our ideals from our facts. This would, I take it, enable even those who disagreed fundamentally as to ideals to work together in researches in educational administration and psychology. They might even work together in researches on school method, if they would admit in common that a certain knowledge ought to be acquired and a certain human power, if possible, increased.

And if they work together in actual problems of school method, they will very soon come to agreement as to the need for some system of measurement. How shall a child be taught to read, for example? Brown says he has always taught by means of alphabetic spelling; Jones, by phonics; Robinson, by a 'word method'. When they get beyond the stage of asserting that certain pupils, taught each by their own methods, have achieved eminence in literature and have been remarkably fine readers, they inevitably settle down, if they go on from discussion to investigation, to a clearly marked quantitative method, with units agreed on by all parties. When we get keen this will be done, even in England. We have most careful measurements in cricket, Marathon races, and other pursuits of real importance to men; and we shall get them in educational methods. Quantification here would, even now, be readily admitted as vitally necessary.

But are the methods of experimental research of value when we pass from little details of method to the great principles which govern our educational theory on a large scale? What have educational psychology and quantitative research to do with these things?

III. Quantitative Research and Educational Theories.

My first contention was, as I have said, that we should separate ideal from fact and realise clearly which was which. I now ask that we may put them together again, and I need hardly say to a psychological audience that our new unity will be very unlike our old one. But will the facts that we already have, or may accumulate, make any difference to our ideals? I think they will. And for evidence I turn to the argument of those who are not experimentalists in quantitative work and who would not necessarily accept its aid.

One writer, already alluded to, believes that we should study foreign languages. Why? Probably because he likes them; but that is not how he puts it to himself. He bases his ideal upon a fact or an alleged fact. "They fibre the mind," he says. Now we are in a position with which Science can deal. We can experiment and see if they fibre the mind. If they do not, he must give up his ideal or be content to hold it divorced from the fact on which he sought to base it. Of course, I am assuming that he knows what he means, and can tell us how to recognise it when we find it.

Another writer, who, in a recent volume of *Psychology*, has severely admonished academic thinkers, wishes to have parents taught how to rear their children. He gives a fact to justify his ideal. This is the fact! "Human intelligence is a limitless thing; it can learn everything, but it has everything to learn." Comment is superfluous. If this be true, quantitative investigation is largely out of court. But my point just now is that the ideal is based on a certain view as to the constitution of the human mind.

Take one more illustration. "Women ought to be educated like men," it is sometimes said, "especially in mathematics." The alleged fact on which this ideal is usually based is that they are naturally quite as well endowed: and we are reminded that there was once a female senior wrangler. My reader can easily multiply examples of this kind for himself. He may think the instances trivial and such as justify the view that experimental researches into fact may be of little value in directing us rightly on those broader issues upon which the main principles of educational theory depend. To some of these, I now address myself, with no hope that I can present final views, but to see, if possible, whether quantitative determinations of fact may not help us there also. And first I will endeavour to deal with a very fundamental question; namely, how far, if at all, can we really teach any one?

IV. How far can We Teach at all?

What then, if my general contention is sound, should be our first duty as educational theorists? Obviously, as it seems to me, to cease our worship at the shrines of those early educationists who, however gifted naturally, had little science behind even their most brilliant guesses. The scientific Theory of Education, we say, has yet to be constructed. And the philosophy of it is to be found in no independent and mysterious temple, presided over by a Professor of Education; but in the metaphysic, logic and ethic of to-day, guided by the knowledge of our own times.

And this is the more necessary since new problems have arisen since the days when educational theory was merely the hotly emotionalised expression of the opinions of an individual. Everything was clear, absolute, unquantified, like the ordinances of a despot, and not a particularly enlightened one. The great problem of all problems to the educationist was not raised in those days.

As has been recently pointed out in the case of Politics, an artificial simplification slumped us all together in an unreal equality; we were all reasonable creatures who worked principally for economic gain and, in our actions as voters or representatives, were guided by an enlightened self-interest, about which we knew enough to choose the right path, and willed strongly enough to pursue it. We were all 'men and brothers'—in theory, I mean; and environment, duly adjusted, would, it was thought, make us all so much alike before long that even the earthly kingdom of heaven that was hoped for threatened to become monotonous.[1]

In Education the same peculiarities were present. If the ideal was informational, it was held that you could get all you wanted into everybody, if you only caught them young enough. If the ideal was developmental, it was held that, under conditions of due freedom, every one would develop into a perfect specimen consistent with the idea of his species. The horse was much less a particular animal than a metaphysical reality (in the Platonic sense) of what a horse ought to be, what it indeed must be if the name 'horse' were to be properly applicable. In the same way 'man' was no mere normal among varying existences, but an ideal thing; and it was for this ideal that our theory was framed. The Educationist, therefore, need have no fear in either case; indeed no one doubted, though many feared, that, by environmental arrange-

[1] *Cf.* Graham Wallas, *Human Nature in Politics, passim.*

ments, among which education was the chief, one could produce a practical equality and uniformity among the members of a nation, or even among members of different races.[1]

But, with the rise of Darwinian evolution, all this was changed. And now there is no serious contribution to educational philosophy in which, in one form or another, the question is not raised—How far can we teach at all? How far, if at all, can changes of any kind be made by education and training? Popular educated opinion, disgusted by the disappointment of its former extravagant hopes about compulsory general education, has executed a *volte face*, and believes now that, apart from some sort of vocational preparation, there is very little advantage to a nation in compulsory education and, indeed, very little hope of any general or wide-spreading culture. Thus disappointment, class-bias, and the Darwinian philosophy have tended to produce a strong reaction against perfectionist systems; and we have the curious spectacle provided for the cynic that, in these days, when we are spending the largest sums ever spent on general education, there is, probably, even among schoolmasters themselves, less belief in its efficacy than ever before. I do not hope to deal with so intangible a thing as general opinion; but there are certain definitely grouped views to which consideration must be paid, for to them, more or less definite expression has been vouchsafed.

To the Froebel, Rousseau, Spencer school, we need for the present to give little space. Their views, logically pressed, lead us to *laissez faire* in educational method, and the doctrine is as dead in Education as it is in Politics. It was easy enough to suppose that liberty would bring all requisite blessings when men were more or less in chains; but Liberty is here, and lo! the millennium is still far away.

Their lineal successors, indeed, aim at an artificial reproduction of that stern and practical process by which, and by which alone, they hold that man has evolved from barbarism to some sort of unsatisfactory civilisation, and which they wish the child to pass through again, with certain moral differences. Spencer, one might think for a moment, advocated something like this, but the resemblance is largely illusory; he advocated Science; the modern recapitulationists advocate Art.[2]

[1] It appears, by the way, from some recent experiments, not yet published, of Prof. Thorndike, and, may I add, from some of my own, that equal educational facilities may result in the emphasis of natural differences, not in their suppression.

[2] By Art I mean the doing of things as opposed to the knowledge of

Meanwhile Herbartians conceive that they will find a more deadly foe than the Froebelian in modern biometric methods; and they assert that conclusions based on statistical summaries about such things as seeds and the antennæ of insects are straightway and illegitimately accepted as applicable to man, and hence to have a bearing on educational theory.

Moderate reviewers tend to discount this alleged antagonism and say that, in any case, teachers will do their best with the material in hand, even if they should learn that they cannot effect such great changes as was hoped in former times. But it would, I think, be rightly urged that teachers cannot, and ought not to be indifferent to the facts ascertained by biometric measurements: they are indeed, as is shown by the recent memorial of the Council of the Teachers' Guild of Great Britain and Ireland, not only not indifferent, but keen that biometric mental measurements should be made. Only, they ask, very reasonably, that we shall draw our educational inferences directly from facts of race and child psychology and not from supposed analogical resemblances between man and the lower animals. But in the absence of any complete body of reliable researches directly bearing on these issues, we must at present argue on such evidence as we have.

There can be little doubt that both the earlier and the later Darwinians tend to the opinion that the possibilities of educational environment are very limited; and such work is quoted as that of the *Jukes Family*—a magnificent monograph which still stands almost unique—Galton's work on the inheritance of faculty, and Thorndike's *Twins*, all tending to show the great importance of natural powers as compared with the influence of varying environments. Against this there is very little at present except the hopes of optimists. The reports of reform institutions, invariably laudatory, are, of course, vitiated by the fact that the persons making them are usually responsible for the institutions, and that their own economic futures are bound up with the creation and operation of a belief in the ameliorative results of the agencies in question.

Among educational writers, the Herbartians fully realise the gravity of the issues involved; and educational writers who are anti-Herbartian seem also to feel its importance. Some

things: of course the doing will involve a knowing as part of its own successful development. I do not mean by Art the "coloured design" (!) which, quaintly enough, the word Art has come to mean in elementary education.

of them, too, in discussing this problem, tend to talk as if an "idea" were somehow independent of the nature of its recipient and, in true Herbartian fashion, worked its way forward, dragging along the person who had been inoculated with it, will he nill he. We have long ceased to believe, rightly or wrongly, that a man's sensational life and his manual dexterities are very seriously dependent on his ordinary educational environment;[1] but an "idea" seems something looser, something more modifiable, something still in more plastic process of differentiation and integration, to use Mr. Spencer's phrase, which so aptly applies to both the biological and psychological worlds.

There are, of course, cases duly attested by the persons themselves in which a chance occurrence—a book, a sight, a suggestive word by a teacher—has changed a man's whole life and dedicated him, he thinks, to a long career of efficient service. One American writer defends the elective system of studies on the ground that, in browsing around, the pupil may hit upon something which is, for him, the most suggestive educational *milieu*. But the American, though he belongs to a people who once declared that men were created free and equal, is probably somewhat truer to fact than our writers who talk of "ideas" creating vocation: he looks on the individual as largely predetermined and the electives as a successive presentation of possible pabula, one of which may happen to be the food of a dominant power.

Yes, but how far predetermined, how far can we teach at all? Must we just confine ourselves to standing by with appropriate stimulus, dropping it, if it does not arouse spontaneous attention, and searching, by means of ancestral records, for what is likely to do so? Must we develop the child's whole nature—a Froebelian dictum? And if we ought, how can we tell beforehand what it is likely to be? Are we to be scared or cheered by this hereditary determinant which, to some writers, stands like a spectre barring our path and casting over our brightest hopes the sickly hue of the sepulchre?

I can only suggest, as before, quantitative determinations under exactly known conditions. We know we can make changes in mental possessions. Can we in mental powers? And if we can, are these changes in any way permanent? And are they in any way transferable to other activities?

[1] I do not wish to be understood as asserting that these functions could not be modified by educational environment.

V. Are Acquired Powers Inherited?

We will suppose that the question as to human teachability has been settled, more or less adequately; but we are not even then at the end of our biological difficulties. Many of us remember when the biological world assumed, or rather, held without question, the principles of Lamarckian evolution. Society could, it was held, dispose of its bad stock by catching them young, teaching them vigorously, and then setting them free to become the parents of children who would, it was thought, start *ab initio* with a better mental endowment due to the education of their parents. In brief formula, acquired traits were believed to be inherited. The growth of what is known as Weismannism was the first great check to the general attitude of evolutionary optimism. Each generation would have to stand, as it were, on its own bottom. Popular education would then become a Sisyphean task; and if Mill, with his optimistic beliefs, could sigh out that something might be done if only the everlasting flood of children could be stopped, much more disheartened would the modern meliorist become who found himself compelled to accept this new doctrine. To begin again at the beginning with every new generation, a beginning which, in every successive generation, was just as low down as before in the evolutionary scale, was a task which was felt to be overwhelming. This was the spectre of heredity in its most formidable aspect.

Meanwhile, the progress of biological knowledge and the recognition of the great complexity of the problem have produced an attitude of impatience among experts towards those who still express the problem in their minds in the old way. They are told, as if they were metaphysicians of an opposing school, that there is no problem there at all. Those of us who followed the discussion in *Nature* last winter were, I believe, much more impressed by this impatience of attitude than by the arguments that were adduced, cogent as many of them were. Of course, if there is no problem, optimistic educationists are showing unnecessary alarm; but what is really meant is that the case is closed against the inheritance of acquired characters. At the risk of being thought unduly favourable to statistical summarising, I again suggest a quantitative experimental treatment of the problem, however expressed, applied directly to man himself. But let us see first if the problem is solved by being stated in other ways, as has been suggested. I quote from the discussion in *Nature*. "In man, the main difference between the infant and the adult is due to use acquirements." "Some powers develop

by nutrition, others by use." The hair and sexual organs are given as instances of the first group, muscle and brain as instances of the second. "Memory, the power of learning, develops under the stimulus of nutriment, but intelligence and reason develop under the stimulus of use."

It is always interesting to note how very certain a biologist can be on psychological problems, and what definite and clear-cut views he can possess. A glance at the work done on the subject of memory would show, however, that such a startling contrast between what is called 'intelligence' (a word tabooed by expert psychologists) and memory is not in fact tenable. Still, careful quantitative work *might* show that this view, however crudely expressed, was not altogether unsound. Doubtless, some of our powers come into being without exercise by us, though one might perhaps suppose that even sexual powers owe something to use. The cause of the development of others must be sought for, possibly, in preceding stages of evolution. Again, I suggest that without quantification we are really in the dark.

Let us seek, however, a more careful statement of those views which are, perhaps, inadequately expressed in the preceding quotations. I still quote from the controversy in *Nature*.

"A principal phase of the evolution of the higher animals is the evolution of a power of responding by growth to stimuli." "The *characters* which thus *arise* are in some species of great magnitude" (italics mine). "They are just as much a part of 'normal' development as the inborn traits." It is further pointed out that variation renders a species adaptable; but the power of developing under the stimulus of experience confers adaptability on the individual as well. The official view of *Nature*, so far as it may be supposed to possess one, is that this way of stating the problem is an improvement on the "chestnut-old one" which asserts that acquired characters are inherited as well as innate ones—a statement that is meaningless, because all characters are both acquired and innate.

It is asserted that the Lamarckians have made two assumptions:—

1. That use causes development in all characters.
2. That parental acquirements affect the germ cells so that traits acquired by use are reproduced in offspring not under the stimulus of use but by nutrition.

As against these assumptions, it is urged that some human structures and functions are plainly incapable of developing under the stimulus of use, *e.g.*, the hair, the teeth, the ex-

ternal ear and memory; though memory is now said to increase under the stimulus of use in the higher animals (other than man).

Another presentation on the same side runs as follows: "Acquirements arise for precisely the same reason that all inborn characters arise—because evolution has created the power of responding in quite definite ways to quite definite external stimuli; clearly then they are innate in precisely the same sense as inborn characteristics". We have further a reference to "man's instincts which impel him to make precisely the physical and mental acquirements which bring him into harmony with his own individual environment". This will be startling news to those who have worked experimentally on questions of instinct, and certainly seems to render deliberate education a somewhat redundant, if not destructive, affair; and we may note that the non-specialised plasticity desired by educationists, and granted above, is now denied us.

Finally, one protagonist accuses another of being in as unhappy a position as those investigators "who, before defining what they mean by inheritable, spend years of labour in ascertaining what is inherited". The last argument savours rather of the metaphysician's closet than of the laboratory, and doubtless in this as in other matters of science, accuracy of definition and experimental work will proceed side by side; but the chief interest attaching to the whole discussion lies in the refusal to admit any validity to the views of the Lamarckians and Spencerians; or indeed to admit the existence of a problem at all: the case is closed against use-inheritance.

I make no claim to competence to deal with biological questions other than those which are psychological; but may not educationists and psychologists have something to say on the question? Its enormous importance to educational theory prompts me to put the matter as it appears to educationists: As we conceive the mental development of children, we believe that each one sets out with certain potentialities of development. Appropriate stimuli will develop these, memory among others. But what we want to know is, assuming that by training we had succeeded in producing in certain children a very great development, say, in memory or imagination, whether these persons as parents would beget children in whom the faculty trained would, with equal training, be developed to a greater extent than with children, otherwise equal, of parents who had not in youth been trained in this way. Of course, as *Nature* says, we cannot cause the acquisition of power for which there is no natural aptitude. That was said

long ago in a review in this Journal in reply to some rather dogmatic arguments *against* use-inheritance. The question of Nature versus Nurture (whether nutritive or stimulant) is a quantitative one, and the question of use-inheritance is a quantitative one, too. It may be that experimental education, whether of man or the lower animals, will be the *first* science to provide us with an answer which both parties to the controversy will accept.[1]

For the present, however, the educational theorist, it seems to me, is bound to accept the balance of biologic opinion and make his educational deductions from a basis of the non-inheritance of acquired characters. But is this spectre so very appalling? If it snatches from us our hope of an indefinite increase of human faculty by the training of successive generations, each of which may be, by virtue of greater inherited aptitude, brought still nearer to perfection, does it not at the same time relieve us somewhat from the degeneration spectre? For if Weismannism be true, we can start *ab initio* with every child; the wizened and feeble offspring of the slum will not suffer because of the unhealthy environment of his parents; that does not affect the 'germ cells'; and, provided his stock is sound, he has, under due environment, an equal chance with other children. Sir E. R. Lancaster says, "There is no evidence that privation and injurious conditions cause deterioration of the stock in animals or plants. They may kill out a stock at once but they do not alter it," which is, of course, quite unadulterated Weismannism.[2]

With frank acceptance then of all modern methods of research, nay, more, in the fervent hope that we are only at 'cock-crow and the morning star' in our applications of quantitative determinations under exact conditions, I claim on this second count also that there is a place for, and a hope of, some melioration through education. But even if there is no transfer of acquired powers by heredity, the following

[1] As this article is going through the press, I see that Dr. Robert M. Yerkes of Harvard relates an experiment on these lines in his book *The Dancing Mouse*. The biologist doubtless finds it hard to conceive how 'somatic' cells can influence 'germ' cells, and we should certainly have hypothetical anatomical atoms—physiological units, gemmules, ids, determinants *et id omne genus* invented to account for it if the belief in such influence should again become dominant. Some of these things, I am aware, are at present in the service of the opposing theory. And doubtless, also, these conceptions will yield the usual crop of internal contradictions, which will keep biologists busy. To the educationist, however, the question merely is, Is there such an influence, and how much?

[2] Quoted in *The Nation*, Feb. 1, 1908.

question may be asked, Is there not another way toward indefinite educational progress by means of the increasing power of the appliances and stored results of civilisation?

VI. The Secular Continuity of Knowledge.

Perhaps the third great question which affects the educational theorist is what may be called the secular continuity of knowledge and civilisation. Mr. Balfour, who is not usually unduly optimistic, puts the question thus, "Does one civilisation start with the advantage of the ground which its predecessor has won?" An able reviewer of Mr. Balfour's pamphlet thinks that the only guarantee of the maintenance of civilisation is the scientific spirit applied to human affairs, inspired by a love of liberty and humanity. He answers our question affirmatively; but let us come to a little closer quarters with the problem.

We have no guarantee, so far, against degeneracy of stock except in so far as this has been thought to be caused by bad environment. Whether there is any hope of improvement by the unfettered and unconsidered action of the evolutionary process in itself is a question which to-day I leave on one side. Suppose we have neither improvement nor degeneration in stock, does it appear that civilisation can become cumulative? I limit my consideration mainly to questions of knowledge and education, not because I deem them to be exceptional, but because I have little competence to deal with the question in any other aspect.

A very brief glance at a few historical object lessons may help my reader and myself to grasp this question in a more concrete way. Greece fell, but Grecian culture triumphed; only when, however, its recipients themselves had changed, and changed before they submitted themselves to it. The Protestant persecutions in France, by exterminating or expatriating those sections of the population most liberal in thought and leaving its maintenance by selective breeding to the upholders of clerical authority, would, one supposes, on the ordinary doctrine of natural selection, have given us an eighteenth century France overwhelmingly Papal, or at least averse to individual inquiry into truth. The exact contrary has proved to be the case. Similarly, responsible and competent historians have given up, on the one hand, the ascription of the French Revolution to the philosophers, on the other, to the terrible destitution of the French peasant.[1] It was due, it is now supposed, to a growing liberality of

[1] See *The Cambridge Modern History*, vol. viii. *passim*.

thought in all classes and the assertiveness, newly grown, of the middle classes. The Moors of Spain were a great and cultivated people, but their civilisation was blotted out by the ruder and more vigorous forces of Christian Castile, and very little of their art or knowledge survives. So perhaps we might go on, quoting case after case of general historical precedent. But it will be more to my purpose as an educationist to quote from the development of knowledge and opinion than to try to draw conclusions from such a tangled skein as the actual complexity of whole civilisations. Let us together pass in review such a book as Lecky's *History of Witchcraft*. It strikes even the historian himself with repeated astonishment that the intellectual output in favour of a belief in witchcraft was enormous in comparison with the work denying its existence. The former had, as we can now see it would have had in times ignorant of psychology, the strongest arguments on its side. But the disbelief in witchcraft, by no means yet complete, is now decidedly dominant. Or let us read carefully such a work as Beazley's *Dawn of Modern Geography*. Perhaps I may be permitted to quote a few telling passages.

"We do not find Europeans of the earlier Middle Ages following in the steps of Ptolemy—correcting his miscalculations, or dominated by his theories. Their geography is turned off upon a different path, and occupied with very different problems; and it is not the lineal descendant of Greek thought in the same way as Arabic metaphysic is the lineal descendant of Aristotle. The great names of ancient science have a vague, but not a very exact or penetrating, influence upon Christian geography and exploration before the fourteenth century."

"In any account, therefore, of mediæval travel, at least before the Crusades, it may be safe to treat the higher classical geography as a deposit rarely used, a legacy generally forgotten, though realised by some.'

"Geographical *theory* or science in Christendom, between the age of Mohammed and that of the Vikings, is in a state scarcely less rudimentary than travel."

"Much of the advance made by the pagan world is now abandoned; part of the knowledge once gained has been forgotten, part seems to lie in a sort of limbo on this side of Lethe, not altogether out of sight, but, as it were, out of touch of the new time, uncared for, unattended to. The word seems reversed—'Let us *not* now remember our fathers, and the actions of famous men'. As Bacon said in another connexion, everything of value seemed to sink, and only the

light and worthless rubbish came floating on down the stream of time. Ptolemy and Strabo, Herodotus and Hipparchus, passed almost wholly away from Christian memory, and the only works of the pagan period which held much attention were compilations of marvels such as those of Solinus, or the lists of place-names which Orosius, Guido, or the anonymous geographer of Ravenna put under contribution."

And in a recent review in *Nature*, the critic of a book on Mathematical Teaching, which, adopting the recapitulatory theory of teaching, speaks of the inter-racial development of the science as if it were linear and continuous, reminds the writer that his speculation is not in accord with historical fact.

It certainly appears that, unless nations, or races, or individuals have evolved into a mental condition approximately like that of those from whom they are to receive knowledge or culture, it is quite useless even for Minerva to land on their shores or offer them instruction: she would be excluded as an alien. (Japan's absorption of Western knowledge is apparently in striking antagonism to my theory—I do not know enough of the internal evolution of Japan prior to this absorption to argue about the matter; but in any case I must, of course, admit changes of extreme rapidity apparently due to the imposition of knowledge from without. It remains to be seen how far she has adopted our thought as well as our machinery.) And we speak of the dominance of Greek and Latin culture in modern Europe; but do the great majority or even a passable minority of the English boys, who spend their time in failing to learn Latin and Greek at our great public schools, really absorb Greek and Latin culture, or even a due measure of the spirit of its literature.

At this stage I can imagine that my reader, who was at first not quite sure whether I was trying to show my mental agility by starting paradoxes or was merely muddle-headed, has decided that I am only platitudinising. But I am going to try to show that that at least is not the case, whatever may be said as to the other possibilities.

Read a popular history of scientific discovery, or even one on the history of philosophy. How often do we meet paragraphs like the following! A, in such a country, did so-and-so. This was the inspiration of B, who followed it up with so-and-so, and this in turn induced C in another hemisphere to advance a further step. The assumption throughout is that, if A, at any time, presents to B, at any time, a piece of rationalised knowledge, B can learn it; and, indeed, that this

is the principal if not the sole method by which knowledge comes and grows in the world. We need, I suggest, exact evidence that C was influenced by B, and B by A, before we paint these pleasing pictures of the educational continuity of knowledge. And if we could get a reliable history of the mental process of scientific discovery, that notion would, I think, be directly controverted. Again, those of us interested in folk-lore and children's tales know how very like they often are and have been among peoples who have had no geographical contact intellectually. Enormous ingenuity has been spent on trying to show how a story got from one nation where it was first current to another nation where it was current later. But perhaps no transfer of this sort was needed at all; corresponding stories might be invented at corresponding stages in evolutional ascent. The influence from without might probably quicken things a little; that is all. The missionary who argued for the scientific accuracy of the Hebrew Genesis, because he found a story of a world-flood among his savages, was, of course, not for one moment conceding the possibility of the genesis of folk-lore which I suggest.

But grant all this, and how is educational theory affected? Am I not really too much in the clouds? I will try to show practical bearings. If we accept the view I am tentatively putting forward, we shall lose much of our present confidence in the external appliances of education. We may have libraries galore, instruments and apparatus *ad infinitum*, museums stored with treasures from every age and every clime. Shoals of visitors may admire, open-mouthed and often empty-headed, our vast and expensive provisions for educational progress, just as people now admire the material embodiments of the grandeur that was Rome; but withal we may be a stupid people. Unless we continue to breed the men who can grasp and control these things in the highest human interests, they will of themselves serve but as accumulated lumber, or pass wholly from the service of God to the service of tables, like the triumphal edifices of the past to the degenerates in Mr. Wells' *Time Machine*.

It does, therefore, seem to me that there is much justification for the view, now gaining some actual currency in educational theory, that we can have no satisfactory education, unless we set ourselves definitely to reproduce artificially the *milieu* in which the human race struggled towards a solution of its problems of life and thought in earlier days.

VII. Does the Child Produce in Replica the Evolution of the Race?

Doubtless many causes have contributed to produce an affirmative belief; but among them has certainly been a general dissatisfaction with the results of an educational system which has tacitly or overtly been founded on the opinion that B can always learn what A knows, provided A tells B often enough, and imposes penalties sufficiently severe if B has not learnt it. The last considerations then which I advance to-day have brief reference to these dicta: that the individual passes through the stages which the race has passed through, and that if one wants to teach effectively one must adopt this as a guiding principle.

If I were compelled to choose between the whole-hearted adoption of either opposing theory, namely, that we should commence the education of the young by means of the presentation of the completed products of a high civilisation, or, on the contrary, that we should try as far as we can to retrace with the young our own racial steps, I should have no hesitation whatever in accepting the latter. I can think of no finer clue on which to work. I can imagine little work more profitable than careful comparisons of primitive peoples, children, and civilised adults, with respect to their bodily and mental development. But I am going once more to put in my old plea. I am going to ask that all these things be quantitatively determined before we set about constructing a theory of education, *totus, teres, atque rotundus*, from what is rather a broad conception embracing the facts than a scientific summary of them. Is there and was there no evolution by atrophy? Has there never been any short circuiting in animal and racial progress? May not the principle of lapsed intermediaries apply to the race as well as to the individual? Not to multiply quotations, I will ask my readers to read the following from Haeckel.

"On account of a shortened process of Heredity, various ontogenetic intermediate forms, which *must* have existed phylogenetically, or in the ancestral lineage, have in the course of historic evolution gradually dropped out from these gaps."

"The term *Kenogenetic process* (or vitiation of the history of the germ) is applied to all such processes in the germ-history as are not to be explained by heredity from primæval parent-forms, but which have been acquired at a later time in *consequence of the adaptation of the germ*, or embryo form, to *special conditions of evolution*. These kenogenetic processes

are recent additions, which do not allow of direct inference as to the corresponding processes in the tribal history of the ancestral line, but which rather falsify and conceal the latter."

"The repetition is more incomplete, in proportion as the latter vitiated evolution (Kenogenesis) is introduced by changing adaptation."

Haeckel speaks of 'vitiated evolution'; he means vitiated theory; but, in any case, he wrote some time ago. What is the position to-day? Mr. Kellog[1] tells us there is a growing opinion among embryologists that "the recapitulation theory of Fritz Müller and Haeckel is chiefly conspicuous as a skeleton on which to hang innumerable exceptions," and that "Unfortunately it is exactly on that weakest of the three foundation pillars of descent, namely, the science of embryology with its Müllerian-Haeckelian recapitulation theory or biogenetic law, that the child-study pedagogues have builded".

What then is the practical upshot on this count? Just as before, that we must quantify our knowledge. The child does recapitulate. Yes, but just how much? The child does short-circuit? Yes, but just how much? Much will come without teaching. Yes, but how much? Something will be done by deliberate instruction and elucidation. Again, how much? Will a child, for example, learn more if he commences school at three years of age than at five? Will he walk sooner if he crawls first? Will he draw better with his hand by-and-by if he begins drawing at first with his arm? All such practical questions are not merely practical; they have a serious and far-reaching bearing upon biology and psychology as well as on the theory of education.

This then I ask and claim from educational theorists. Firstly, that we turn less to the teachers of the past and more to the thinkers of to-day; that we avail ourselves more freely of modern science and philosophy, which have already put out of court much that was formerly held as educationally axiomatic: secondly, that we cease to think of a philosophy of education apart from and independent of the general philosophy of our own times. Above all, that we quantify our knowledge. We wish to stimulate a child's interest; yes, but to how much and how far will spontaneous interest carry us? And how much further ought we to go? And at what cost? for we do not wish our schools to be factories for the production of mental fatigue on a large scale and we have begun to measure this fatigue so as to prevent it. But MIND is not the journal

[1] *Darwinism To-day*, 1907.

in which to consider the details of doctrine. It suffices if I have shown that, just as in the little problems of school method, so also in those vast general principles which are even cosmical in scope—we can make small advance in educational theory without ready and constant appeal to quantified fact.

In the day when that belief is accepted we shall find in England some adequate provision made for a systematic collection of the data on which our beliefs on these great questions ought to depend.

V.—DISCUSSIONS.

PROF. WATSON ON PERSONAL IDEALISM: A REPLY.

In a criticism which he has done me the honour to bestow, in a chapter of *The Philosophical Basis of Religion*, upon my article on *Personal Idealism*, Prof. Watson has misunderstood and misrepresented me in a way which I should have thought quite impossible. I think I shall best succeed in correcting these misrepresentations, and at the same time do something to meet his objections, not by writing an article or attempting a continuous argument but by citing and commenting on a few passages of his book.

1. "Let us put ourselves for a moment at the point of view of the Personal Idealist. All that I or any other being directly apprehends consists, as we must suppose, of ideas in my mind—ideas which, as unique and peculiar, cannot be present in any other mind, not even the mind of God, in the sense in which they are present to me. Now, if we are to take this doctrine strictly, as we have a right to do with any philosophical theory, is it not evident that by no possible process can any of us ever break through the charmed circle of his own separate individuality?" (p. 108).

Now in the first place, I have not said that all that I "directly apprehend" consists in "ideas in my own mind". Nor can I find in my article any statement which can reasonably be thus interpreted. But Prof. Watson will probably want to know whether I am prepared or not to accept the doctrine imputed to me. I should reply that there is a fatal ambiguity in the word "idea," in the word "directly," and in the word "apprehend". I may best perhaps exhibit the first ambiguity by recalling Mr. Bradley's familiar distinction between idea as a psychical event "in my head" and idea as "meaning". By this I do not mean that I adopt without qualification Mr. Bradley's theory of predication. It is enough that an "idea" in my mind may be looked upon either as a "psychical event," or to indicate something for which it stands in Reality. Now I certainly do contend that my idea considered as a psychical event exists in my mind and nowhere else: I do not conceive it thinkable or possible that God should experience, for instance, the identical pleasures and pains which I experience. Prof. Watson has himself pronounced it "perfectly true" that "the existence of the hunger in me may be known by others while

no one but myself can experience the feeling" (p. 119).[1] But supposing we turn from the "idea" considered as an event in my mind to an "idea" as it enters into knowledge, I have never suggested that an idea is *simply* an event in my mind. I recognise that in every judgment (which may be treated for the present purpose as an idea[2]) there is an objective reference. But this objective reference does not by itself carry me beyond my own experience. That objective reference exists no less in a judgment such as "I had a toothache," or even "I have a toothache," than in the judgment "Trees are green". Even here what I mean relates to a reality which is something other than the judgment itself considered as a momentary state of my consciousness: for I necessarily think of myself as something distinguishable from this or that momentary sensation. As the judgment is made immediately and is not an inference, it might perhaps be called a "direct apprehension," though "direct apprehension" does not seem to me a suitable word to apply to any judgment—even a "judgment of perception". But the question remains whether I can pronounce equally "immediate" judgments upon anything but my own mental states, past or present. Now for the moment we may put aside the question how far I may be said to make immediate judgments about things existing outside or independently of my own consciousness. There is a real difference, though I think not so great a difference as Prof. Watson supposes, between my Idealism and his as to the relation between the individual mind and the "external world" of things in space. But his argument for the moment is, I take it, that, upon the view that reality ultimately consists in the experiences of individual minds, I could not by any possibility get beyond *my own* individual mind, and attain a knowledge of other minds. That we actually do make judgments

[1] Perhaps it will be fairer to Prof. Watson and more satisfactory to the reader to quote the whole passage (Prof. Watson is here arguing against "the new Realism"). "Now, there can be no difficulty in dealing with such an instance as this. My feeling of hunger, it is said, is distinct from the actual condition of hunger; in other words, the feeling is a mode of my individual consciousness, the hunger is not. One reason given for this contention is, that the existence of the hunger in me may be known by others while no one but myself can experience the feeling. And of course this is perfectly true" (p. 120). It may be, of course, that Prof. Watson is here thinking only of other "finite" persons, and not of God or the Absolute. If so, of course my *argumentum ad hominem* falls to the ground. I can only say that to me it is as much a matter "of course" that God does not experience my hunger (however much He may know it) as it is to Prof. Watson that his neighbour does not experience Prof. Watson's hunger. By that I do not mean of course that the relation between God and any individual human soul is the same as the relation between two human souls. I shall return to this point hereafter.

[2] Prof. Watson may object to such a use of terms; but it is only on this assumption that I should admit in any sense whatever that the mind directly apprehends only its own ideas.

about the contents of other people's consciousness is common ground between us: but Prof. Watson will want to know whether I admit that we "directly apprehend" such contents. I have some difficulty in understanding what he means by "direct apprehension" in such a connexion. That the ordinary mind at the level of "common-sense" thought does not draw a distinction between the directness of the judgment "I have a toothache" and the judgment "he has a toothache," I do not of course deny. But does Prof. Watson himself contend that there really is no difference? Prof. Watson admits it to be true that "no one but myself can experience the feeling of hunger". Can he then contend that another person has as direct an apprehension of my hunger as he has of his own? Can he deny that it is by inference that he knows that I am hungry? If it is not by inference, how is it that we are liable to mistakes as to whether others are hungry, whereas we don't make such mistakes about our own hunger? I could wish that Prof. Watson had given an instance of what he means by a "direct apprehension" of another man's state of consciousness. But, whatever instance he gives, he would still, as it seems to me, have to admit that in *some cases* we have no direct apprehension of another's mental states, and yet do by inference attain to a knowledge of his states. What Prof. Watson can do in one case, the "personal idealist"—if I am to be taken as a representative of that position—can do in all.

2. Prof. Watson, after the passage quoted above, goes on, "What, then, can be meant by other objects or individuals, or by God? My knowledge of them must consist in the ideas which arise in me" (p. 108). Why so? The argument might hold, if I had admitted I cannot get an *indirect* apprehension or, as I should prefer to say, "judgment" or "knowledge" of those states: but I have not done so. And I am not bound to do so any more than he is. To say that my knowledge of God or other minds "consists in the idea[1] which arises" in me is true enough (could Prof. Watson himself deny it?), if by knowledge is meant the actual psychical state of the knowing mind: but it does not follow that the object that I know is simply the state of my own mind. Prof. Watson admits that the experience of hunger is in my mind only. Does it follow that, according to him either another's hunger is a state of my mind, or I cannot know another's hunger? No reason that he can give for inferring the existence of hunger in another is unavailable for me. Even if there be other things about other minds which are objects of "direct apprehension" (I don't in the least know to what kind of fact about other minds

[1] I here allow myself to adopt the phraseology which Prof. Watson attributes to me, but I have never used this language about "ideas". Prof. Watson appears to assume that because I have more respect for Berkeley than some other Idealists, I am bound to endorse all Berkeley's sensationalistic errors.

Prof. Watson would appeal), that would not alter the situation. What Prof. Watson can do in one case, the personal Idealist can do in others.

3. Prof. Watson continues: "Nor can it even be said that these ideas in some way correspond to objects lying beyond my mind, for Personal Idealism does not admit the existence of any objects other than ideas" (*ib.*). I have never anywhere said, implied, or thought that there exist no objects but ideas. On the contrary, my whole line of argument assumes a direct consciousness of the 'self' which is not (for me at least) a mere succession of ideas. But even if we substitute, "objects other than the self," the accusation is unfounded.

There is here again a fatal ambiguity in the word "object". I fully recognise the difference between an "object of thought" and an "idea" in the sense of a sensation; and if by "ideas" Prof. Watson means "sensations," I have never asserted that all our knowledge is of "ideas". I accept the distinction between a knowledge of objects and a mere consciousness of sensation as fully, and in much the same sense, as Kant or Green. But we are not now concerned with the question of *things*. To show that the Personal Idealist can get beyond his own mind, it is enough to show that he can know ideas in other people's minds. Now does the denial of the existence of any object but "ideas" prevent my knowing that another man has ideas, and what they are? The legitimacy of the inference I will discuss in a moment. But its impossibility is assuredly not proved by the argument now employed. The personal Idealist does not assert that all objects are ideas in *his own* mind. Why may not I have a knowledge of other people's ideas, which knowledge is also undeniably (from another point of view) an idea in my own mind? I quite recognise the difficulties of the "correspondence theory" of Truth. But the difficulties are as great, so long at least as we are dealing with the knowledge of mental states, from Prof. Watson's point of view as from mine. These difficulties it would take us too long to discuss now. At least "at a certain level of thought" I don't see that Prof. Watson could deny that, when he thinks of another's "hunger," the object of his thought is an 'idea' in another's mind to which another idea in his own mind, *i.e.* his knowledge of it, "corresponds". The difference between a mere sensation and a piece of knowledge is here irrelevant: both are ideas in the sense that they are psychical states. If, then, "the Personal Idealist does not admit the existence of any objects other than ideas" means "ideas in his own mind," the imputation is untrue; if it includes "ideas in other people's minds," it is true on the understanding that in "idea" is included every kind of psychical experience, and that to "ideas" we add "selves, spirits, or persons".

4. "If each individual is confined to his own ideas, by what

strange process is he led to imagine that there are other individuals besides himself? Is it not obvious that such a notion would never dawn upon him at all?" (*ib.*). As I have just explained, I have never said that "each individual is confined to his own ideas," if by that is meant that his judgments have no objective reference, or that he cannot know another's ideas, or that he cannot know himself as the permanent subject of his changing states. But I do certainly contend that it is by inference or analogy that the individual reaches the knowledge of other selves. I do not mean that psychologically the infant starts with a fully developed consciousness of the distinction between "self" and "not-self," or between "self and others". The distinction between 'self' and 'not-self,' between subject and object, gradually emerges in the development of consciousness, and so does the distinction between self and others. The inference is no doubt unconscious inference in the sense that the individual does not and often could not analyse the process. But it is unnecessary for our present purpose to go into these questions of Psychology. The real question is whether the reflecting individual can at the present moment justify his belief in the existence of other persons except by a process of inference from the facts of his own consciousness.

Prof. Watson calls such a process "strange". Why "strange"? If within my own experience I discover objects resembling my own organism, behaving in a similar way, responding to such and such stimuli in a similar way to my own organism, is it not a perfectly reasonable inference that there exists another consciousness similar to my own, which is *for itself* (with differences of detail which very often I do not and cannot fully know) what I am to myself? If I find another object of knowledge, shrinking, wriggling, crying out just as that object of knowledge which I call my organism does when I am in pain, why may not I infer that it is because there is another consciousness in pain similar (more or less) to my own? No difference of opinion as to the sense in which either organism exists independently of anybody's knowledge or anybody's sensation can affect the validity of this inference. In reply to this charge that Personal Idealism leads to Solipsism, I need do no more than refer to the chapter of Mr. Bradley's *Appearance and Reality* entitled "Solipsism". Mr. Bradley's analysis of the reasons for believing in other selves besides my own seems to be one that cannot be improved upon, and the reasons seem to me unanswerable. Mr. Bradley's system as a whole is not mine, but my Idealism is the same as his in so far as it admits—what seems to me the logical consequence of all Idealism—that "Reality is experience". There is not, so far as I have noticed, a single argument used in that chapter which I am precluded from using by anything that I have ever written. Nor do I see how Prof. Watson could himself use any other line of argument. Does he contend that the knowledge of other selves is

a priori? Then will he tell us what he knows about them *a priori?* Does he, apart from experience, know how many such selves there are, how far they resemble himself and how far they differ? If that is so, why does he not save the Government from the elaborate and expensive machinery of the census? If not, his knowledge of other selves seems to be very much in the same case as Kant's knowledge of things-in-themselves, and the usual argument against that theory can be used against Prof. Watson. If he does not know *what* they are, how can he tell even *that* they are?

5. The whole argument on page 109 proceeds upon the assumption that the Personal Idealist admits that an individual has "no knowledge of the ideas of any other individual". This I have already repudiated. On the following page (p. 110) I come to a still more definite misrepresentation. "God, however, as it is admitted, is the originator of the human and all other minds, though He is only the cause of those experiences which are not willed by other causes." I have never said this: the "only" is a gratuitous addition of Prof. Watson. The passage which Prof. Watson probably had in mind runs as follows: "By any one who admits the idea of volition into his own conception of God at all it will hardly be questioned that, if God wills. He must will all, or at least (let us say for the present) everything that is not willed by some lesser will". Prof. Watson absolutely ignores the words "all, or at least". I was anxious to avoid in my short contribution to *Personal Idealism* entering upon the Free-will controversy at all, and therefore put aside the question of the relation of the divine Will to acts caused by a human will. I have since more fully explained myself in *The Theory of Good and Evil*, but even in *Personal Idealism* I carefully guarded myself against saying that acts willed by a human will are not also willed by God; and, since I explained that I did not postulate Free-will in the indeterminist sense but only "in the sense of the Determinist who believes in self-determination," *i.e.*, in the sense of Green or Dr. Caird, it ought to have been clear to any reader who knew the meaning of the terms used that I did not at all events exclude the possibility of *all* the experiences of each and every individual being willed by God. For the Determinist who believes in "self-determinism," and who regards the self as created, it is obvious that all the 'free' acts of the self must be in some "eminent" sense referred to God, since they proceed from the nature of the self which is caused to be what it is by God. I do not think I need here copy out the pages of *The Theory of Good or Evil*, in which I have there definitely rejected the Libertarian or Indeterminist position; but even in *Personal Idealism* I wrote explicitly: "We have found it necessary, moreover, to regard Him as causative—as causing those experiences of the other souls of which their own wills are not the cause, and (since no human will is ever the *whole* cause of anything) as co-operating in some sense with whatever causality is exercised by

human wills" (p. 380). Prof. Watson may regard this explanation as unsatisfactory, as it was admittedly inadequate, but it is inexcusable that he should ignore it, and insert an "only" where I used none.

6. "Is it really necessary to point out that, as all experiences of individuals, whether willed or not, belong solely (according to subjective idealism) to the individuals themselves, those experiences cannot without contradiction be ascribed to God by thinkers whose fundamental principle it is that nothing exists except what is experienced by individuals?" (p. 111).

There is an ambiguity here in "ascribed to God". I have denied that God "has" the same identical experiences as ourselves, just as Prof. Watson apparently, in the passage quoted above, admits that my hunger is in my own mind only. But I do not deny that God knows those experiences, and can therefore cause them. Why is there any "contradiction" in maintaining that God can cause hunger in another without feeling hunger Himself, just as I can cause hunger in another without being hungry myself? Of course I am aware that arguments may be used against such a view: but where is the contradiction? Again, there is an ambiguity about the statement that "all experiences of individuals . . . belong solely . . . to the individuals themselves". If "belong" to the individuals means "are their experiences" I admit (with Prof. Watson) that my hunger is not my neighbour's; but I do not deny that I can *know* another's hunger, and that when I and my neighbour are both hungry our hunger is in a sense the same hunger. My hunger is like another's, and I accept the doctrine, which I presume Prof. Watson would hardly deny, that likeness = identity + difference. There is an element in the two hungers which is the same, but this identical element is, taken by itself, a mere abstraction and not reality. The universal hunger only has real existence in the two consciousnesses. When from personal and very subjective feelings we turn to what are commonly called events or objects in the external world, the identity becomes greater, and the differences may often be such as may for practical purposes be ignored. I say that I and my neighbour look at the "same" house. When I come to analyse what the house means, I cannot deny that our concept of the house means that it produces (*inter alia*) red sensations in both of us and in all other men who are not colour-blind; but these two sets of feelings are not the same, unless I make abstraction of the fact that they are experienced by two different minds. I do not deny that my concepts or my judgments are often absolutely identical with those of my neighbour, but then concepts are abstractions when taken apart from their psychical context in individual minds. I have been taught by Mr. Bradley and others not to make the reality of the world consist in abstractions. Prof. Watson professes to be an Idealist. If so, he cannot claim reality for the object independently

of its relation to the subject. And I for one cannot help pressing the question "What subject?" I say "God and all men and higher animals and all other minds capable of seeing and knowing the house". If Prof. Watson chooses to regard all these minds as really one, that is an important difference between us; but I fail to see that I have any more difficulty than he has in accounting for my knowledge of other minds, and so of escaping Solipsism. His—as I cannot but think it ambiguous and hesitating—attitude on the question to what extent and in what sense objects in space exist independently of any mind's experience leaves us in exactly the same position as regards other consciousnesses, which neither of us regards as mere states of the mind which knows them.

7. "What, then," Prof. Watson continues (p. 111), "can possibly be meant by speaking of God as willing the 'world'? The 'world,' as we are told, is admittedly the 'object of God's thought,' *i.e.* it consists of His individual states of consciousness or experiences. To will these, however, is merely to will certain experiences of His own, and such experiences must be entirely distinct from the 'world' itself, *i.e.* from the experiences of other beings." Here I am really at a loss to understand what strange opinion it is that is attributed to me. Prof. Watson appears (1) to accuse me of making the world = merely the experience of God, and then (2) to assume that by the world I mean only the experience of other beings to the exclusion of God's experience. Now it is obvious that if I thought the world was simply the experiences of God, I should not admit that those experiences of God must be entirely distinct from the 'world' itself: for I should be identifying the two things. How Prof. Watson can suppose that I could possibly have held both the above positions, I am at a loss to imagine. Certainly he makes not the smallest attempt by quotation, or even by plausible inference, to convict me of having maintained so gross a contradiction.

As a matter of fact, each of these two inconsistent interpretations of the word "world" is a partial and one-sided interpretation of my meaning. I do hold (1) that the world is the experience of God: when I hold that God wills these experiences of His own, I am in exactly the same position as any orthodox Hegelian who uses the expression "God creates the objects of His own thought," except that I do not think that God's consciousness consists merely in the system of abstractions which make up "thought" as that term is commonly used by ordinary people. I hold that it includes feeling or an element analogous to feeling in us. Some Hegelians explain that this was fully admitted by Hegel, only that what ordinary people call feeling, he called "immediacy" or "immediate thought". With such Hegelians I have so far no quarrel. But I hold (2) that this world of Nature exists also in the consciousness of other minds, *i.e.* in the sense that those minds know partially what God knows perfectly and have experiences which have a certain

resemblance to those which we are bound to infer in God. These experiences of others I hold to be known to God, and also that He wills these experiences to be experienced by them. The only point at which I differ from at least some Hegelians is that (1) I emphasise this volitional aspect of Consciousness which they are more or less disposed to explain away into thinking (from a passage on p. 127, where he speaks of God as "creative reason," I infer that Prof. Watson does not adopt this attitude). (2) I do not hold that the experiences of other minds are at one and the same time also parts of the divine Consciousness, though they are known to the divine Consciousness.

8. "The self-contradictory character of this doctrine lies on the very surface of it. To begin with, it assumes that God, like other forms of being, is a separate individual, limited to His own experiences, and *incapable of exercising any influence upon other self-involved individuals*" (p. 110).

At this point Prof. Watson's misrepresentation of me reaches a climax. By what process of inference Prof. Watson has succeeded in persuading himself that the words italicised represent my opinion, I am at a loss to imagine. Not only have I not said one word to justify them, but I have said over and over again precisely the contrary. I have expressly (*Personal Idealism*, p. 380) spoken of God as "causing those experiences of the other souls of which their own wills are not the cause". I may here put aside the fact, which I have already pointed out, that I have expressly spoken of God as also in a sense the cause of those experiences which *are* due to their own wills. It is enough for my present purpose to insist that, in saying that God causes even the non-voluntary experiences, I have obviously admitted that He does "exercise an influence upon other individuals"—individuals whom I have never spoken of as "self-involved," whatever that may mean.

Here are a few other statements of mine: "The dependence upon God of the bodily organism carries with it the dependence upon Him also of the spirits to which such bodies are organic" (p. 381). I have spoken of the "contrast between an eternal or unoriginated mind and minds which are originated and *dependent*" (p. 381). I go on to say that as attempts to express the relation of God to other spirits "I have no objection to the fashionable phrases, 'partial communication to us of the divine thought,' 'partial reproductions of the divine consciousness,' 'limited modes of the universal self-consciousness,' 'emanations from the divine Mind,' and so on, provided that they are not used to evade the admission that the fact of such reproductions occurring must be regarded as no less due to the divine will than the first appearance and the gradual development of the bodily organism by which these reproductions are conditioned" (p. 382). How in the teeth of these declarations Prof. Watson can bring himself to accuse me of holding that God, having brought the spirits into existence, 'no

longer influences them,' or of believing in "a being who originates minds which are completely independent of their originator" (p. 112), or that individual minds are "hermetically-sealed" or the like, I am at a loss to conceive. I should have thought that my language in *Personal Idealism* was plain enough to leave no doubt in the mind of any candid reader that I regard every successive moment's existence and every successive experience of every spirit other than God as caused by God not less directly and completely than the first moment of such existence—that in old-fashioned theological language the act of conservation is essentially the same as that of creation.

But perhaps, as Prof. Watson finds a difficulty in recognising identity of doctrine when it is not expressed in the particular set of comfortable Mesopotamia-like phrases to which he is wedded, I had better express my confession of faith in his own words.

"While Constructive Idealism thus affirms the objective reality of God, it refuses to admit that He can be conceived as a separate and independent Being standing apart from the world and only acting externally upon it; on the contrary, it affirms that He is actually present in the world, and above all in the self-conscious life of man, while yet the infinite fulness of His being is not comprehended by us" (p. 432).

Or again:—

"Constructive Idealism maintains that not the most infinitesimal atom of matter or the faintest trace of feeling, not to speak of the fair creations of imaginative genius or the solid constructions of reflective thought, could possibly exist, were they not involved in the Infinite and supported by its continual presence and spiritual energy" (p. 437).

But for the use of the ambiguous and misleading word "Infinite" there is nothing in these passages to which I could not heartily and *ex animo* subscribe, and which does not represent what I have over and over again endeavoured to express in my own no doubt crude and unscientific way. The points of difference between us lie chiefly in these points:—

(1) I hold that, if it is once admitted that the object has no existence apart from *some* subject, we must be bold enough to accept the inference that the object is, in ultimate analysis, merely the experience of some subject or subjects, though we must make it plain that we do not mean by "experience" merely the mere sensations of the Sensationalist. My Idealism, in short, is the Idealism of such genuinely Idealistic writers as Lotze, Mr. Bradley, Prof. Ward, Prof. A. E. Taylor, Prof. McTaggart—not the "soft Idealism" of the school to which Prof. Watson belongs—a school which after refuting the Materialist by idealistic arguments meets the assaults of the Realist by unsaying all that he has said about the necessary reference to Consciousness involved in all the objects of our knowledge (except Spirits), and so leaving on the mind of an

outsider desirous of penetrating to its esoteric meaning much the same impression as the Athanasian Creed produces upon the mind of the average layman. For my own part I do not quite see the difference between saying that "Reality is experience" and saying (with Prof. Watson, p. 446) that "the physical world has no independent being, but is merely a phase in the life of mind"—at least not if Mind is to be held to imply (as for Prof. Watson it apparently does imply) consciousness.

(2) I do not regard the consciousness of each human individual as identical with the consciousness of God, or part of it, holding that the idea of a consciousness which forms part of another consciousness is essentially unintelligible and self-contradictory. To be caused by another consciousness, to be influenced by it, to love it and be loved by it, to hold communion with it—all these are not the same thing as to *be* another consciousness. Doubtless God and all the other consciousnesses constitute a Unity—if you like an Absolute. But I can see no reason to believe that this Unity is the particular kind of Unity which belongs to a self-conscious Being. Believing with Prof. Watson that God is a self-conscious Being, I refuse therefore to identify Him with the Whole, the Universe, or the Absolute. Consequently also He is not, in the natural and obvious sense of the word, "infinite," though I could easily find senses in which that word might intelligibly be applied to Him.

This was the gist of my contention. And this point is so little discussed by Prof. Watson that, even after reading his book, I cannot tell whether he does or does not identify himself with the position I attacked. If he is to be really consistent with his declaration that "no one but myself can experience the feeling" of hunger (p. 119), I should infer that he does not share it. If so, the supposed difference between us disappears. Only I fail to see how, if Prof. Watson were logically to think out what is implied in this position, he could avoid finding himself in much the same position as the object of his criticism, with all its difficulties real or imaginary, and being compelled to give up the doctrine that God "must be conceived as in some sense comprehending within Himself all that is" (p. 273).

(3) I may just allude to a third point of difference. I do not accept the doctrine that God is "out of time". In what Prof. Watson says about God having "successive ideas and experiences," "distinguishes Himself from all other consciousnesses" and the like (p. 110), he has most unfairly taken no account of the paragraph in which I expressly qualified any statement which might bear such an interpretation by suspending judgment upon the question of God's relation to time.

I do not intend to enter upon any further argument with Prof. Watson at the present moment. If I did so, I could do little but repeat the arguments which, as expressed in *Personal Idealism*,

Prof. Watson found so unconvincing or unintelligible, or by reproducing the fuller account of my views upon some points which is now to be found in *The Theory of Good or Evil*, in my contribution to *Contentio Veritatis* (which is referred to in a note in *Personal Idealism*), in an article upon "The Alleged Immanence of God" (*Contemporary Review*, June, 1907), and elsewhere. I am quite aware that all that I have written does not amount to a fully developed and articulated metaphysical system. I could only fully meet Prof. Watson's arguments by developing such a system. But I think I have said enough to show that his representation of my opinions amounts to a mere caricature. The only way in which I can account for his attributing such absurdities and contradictions to me is by supposing that he is really in earnest with the position to which some of his language seems to point, *i.e.*, that he gets his notions of what goes on in other people's minds entirely *a priori*. At all events, I feel that any further reply to a criticism based upon such misconceptions would be useless. I am not likely to underrate the value of the debt which all British Philosophy, and especially Oxford Philosophy, owes to the School to which Prof. Watson would be the first to admit that he belongs: but I am not disposed to think that Philosophy has simply stood still since the day when Prof. Watson was a student at Glasgow. And I hold also that the truth which that School teaches may often be expressed in language less ambiguous and more intelligible than the phrases which constitute its well-known shibboleth. I have read much—I may say most—of Prof. Watson's book with sympathy, agreement, and respect. If he had taken the trouble to understand me, he would probably have found that the difference between us is less than he supposes: for it is obvious to me that Prof. Watson's Idealism, unlike that of many who employ almost exactly the same phrases, is the Idealism of a genuine Theist. He is free therefore, or comparatively free, from many of the tendencies against which "Personal Idealism" is a protest. I do not doubt the perfect good faith of Prof. Watson's criticism. At the same time I cannot but remark that a little more pains would at least have avoided attributing to me opinions which I have in express words disclaimed, whatever may be said about the legitimacy of the inferences drawn by him from what I actually have maintained. The injury which such misrepresentations do to the criticised is something which no subsequent correction can undo. Misrepresentations of this kind stick. Prof. Watson's book will be read by people who do not read the back numbers of MIND, and they will believe that I have said and think what he attributes to me. If my opinions were so inconceivably absurd and so full of "obvious contradictions" as Prof. Watson supposes, they would hardly have been worthy of the criticism which he has bestowed upon them in a serious philosophical treatise.

The harm that is done by such distortions of a writer's position may be illustrated by the fact that my friend Prof. Mackenzie, in spite of his having, as I have reason gratefully to remember, read through my largest work in a very sympathetic spirit, pronounces in his review of Prof. Watson's book in MIND (October, 1908) that it is "thoroughly fair in its references to divergent positions". I trust that, after reading this paper, he may find reason for altering his opinion on this point, though the alteration will leave the merits of the greater part of the book just what they were before.

H. RASHDALL.

NOTE ON PLATO'S "VISION OF THE IDEAS".

THE present brief communication makes no attempt to examine in detail all the positions taken up in Mr. Temple's striking article (MIND, N.S., 68, pp. 502-517). All that I wish to do is to point out that Mr. Temple's conception of the theory of εἴδη as originated by Plato in consequence of an "ecstatic vision" directly connected with a condition of sexual excitement reposes upon a string of assumptions which are all either certainly or probably mistaken, and is moreover at variance with the context of the very passages upon which it is directly based.

Mr. Temple's theory may fairly be said to require the following assumptions: (1) The doctrine of εἴδη as the objects of the highest kind of knowledge is an invention of Plato, and the speech of Diotima in the *Symposium* is a record of the experience which first suggested the invention; (2) the central feature of that experience was a sudden ecstatic rapture, comparable with the transition from intense darkness to dazzling illumination, and perhaps, if I understand Mr. Temple's allusions aright, attended by an actual hallucination of sudden illumination; (3) this ecstatic vision of Beauty was most probably the sole origin of that whole theory of εἴδη which is worked out in detail in the *Phædo* and *Republic;* (4) the ecstasy was the direct result of sexual excitement restrained from grosser expression, and so reflected inward upon itself. All these assumptions appear to me unwarranted, and all but the first demonstrably false. I will therefore make a few remarks upon each of them.

(1) We have, of course, no means of disproving that the experience described by Diotima is one peculiar and personal to Plato himself, but, on the other hand, we have no means of proving that it is. "Socrates" and Diotima may be mere mouth-pieces for Plato, but, equally, they may not. And if "Socrates" is made to talk as he does in the *Symposium* because Socrates actually did talk so on occasion, the theory that what is being described is the special personal experience of Plato falls to the ground. Now I should like to call attention to one point which seems to me to suggest at least a possibility that the speech of "Socrates" in the *Symposium* is much more of a reproduction of the manner of talk of the historical Socrates than is currently supposed. Careful study of the speech ascribed there to Diotima, particularly of pages 208-209, seems to me to make it clear that the conception of philosophical question and answer as the "maieutic art" of spiritual delivery is an inseparable part of the wider conception of the philosophic ἔρως, and cannot be properly understood except in the light of what the *Symposium* tells us of the impulse towards τόκος ἐν καλῷ.

(*Cf.* the constant recurrence in the pages referred to of the metaphor of the birth-pains of the soul that is in travail with an idea.) Now Plato's famous statement in the *Theætetus* that Socrates described himself as an adept in this spiritual midwifery is happily confirmed for us by a jest of Aristophanes in the *Clouds*, where the very imagery of the *Theætetus* and *Symposium* is employed (*Clouds*, 137, φροντιδ' ἐξήμβλωκας ἐξηνρημένην).[1] It would seem then that in his language about the "maieutic art" Plato is actually reproducing a turn of speech so common on the lips of the historical Socrates as to have been thought by Aristophanes worth parodying. Hence, it is at least not unlikely that the whole conception of ἔρως as giving the initial impulse towards philosophy, from which the "maieutic" metaphor is derived, may not be specially Platonic at all, but a part of Plato's inheritance from Socrates. In any case there are two considerations which seem to me to make strongly for such a view. The manifest care which Plato has taken in the *Symposium* to make Aristophanes and Agathon speak "in character" ought to suggest that he has probably done the same thing all through the dialogue if only we had the means of proving it, and that it is therefore unlikely that he should have put into the mouth of his "Socrates" a theory which is purely un-Socratic. (The case of a dialogue like the *Philebus* which carefully avoids anything like characterisation is, of course, entirely different.) Moreover the susceptibility of Socrates to the charm of the νέοι is one of the most familiar traits of his character, while we have no real evidence at all of any similar susceptibility on the part of Plato.

Of course this question about the history of the notion of a philosophical ἔρως is only part of the much wider question with whom and where did the doctrine of the εἴδη itself originate? It is an essential part of Mr. Temple's case that the whole doctrine originated in the mind of Plato, and that, consequently, any theories expressed in the dialogues which presuppose the belief in the εἴδη must be "un-Socratic". Here again, as it seems to me, the current conceptions are palpably erroneous. If we are to take Plato as meaning what he repeatedly says, the doctrine of the εἴδη is in no sense peculiar to his "Socrates". It is a conviction shared by "Socrates" with a large group of thinkers, constantly spoken of in the *Phædo* and *Republic* as "we," and including, among others, Simmias and Cebes, Theban disciples of the Pythagorean Philolaus. (Similarly in the *Timæus* it is Plato's real or imaginary Pythagorean astronomer who tells us that "we" are in the habit of talking about "fire-in-itself," and the rest of the εἴδη.) As regards the *Phædo* the case has been so admirably put by my colleague, Prof. Burnet, that I need do no more than refer my

[1] *Cf.* especially the language of *Theætetus*, 149 *d*, 150 *e*; the metaphor in ἀμβλίσκειν is too vivid, almost, for ordinary Attic diction, and it cannot be a mere coincidence that both Aristophanes and Plato should apply it to the associates of Socrates.

readers to his discussion (*Early Greek Philosophy*, pp. 354-356). To put the point quite briefly, what is specially characteristic of "Socrates" in that dialogue is not that he believes in the εἴδη,—so far he is on common ground with Simmias and Cebes, who are among the "we" to whom the theory is already quite well known,—but that he does not believe that the soul is the ἁρμονία of the body, as Simmias says "we" are accustomed to suppose.[1] The same representation occurs again in the *Republic*, and explains why no statement is required there in proof of the theory of εἴδη. The explanation is simply that Glaucon is one of the "we" whose "usual procedure" is to assume an εἶδος answering to every class name.[2] So in the *Sophistes* any careful reading of the passage about the εἰδῶν φίλοι reveals the fact that they form a numerous school, and consequently that they are not, as is sometimes fancied, an *alias* for Plato himself.[3] I cannot argue the

[1] See the references given in Burnet, *op. cit.* That the doctrine of ἀνάμνησις is peculiar to Socrates in a way in which the theory of εἴδη is not comes out repeatedly in *Phædo*, 72 *e*, ff. It is the doctrine ὃν σὺ εἴωθας θαμὰ λέγειν. *Cf.* 73 *b*, ἀπιστῶ μέν σοι . . . ἔγωγε οὔ, οὐδὲν μέντ' ἂν ἧττον ἀκούοιμι νῦν πῇ σὺ ἐπεχείρησας λέγειν. So 86 *b*, τοιοῦτόν τι (*sc.* ἁρμονιάν) μάλιστα ὑπολαμβάνομεν τὴν ψυχὴν εἶναι. The object of the interlude between Phædo and Echecrates, 89 *a*, ff., is to mark with special emphasis the importance of "Socrates'" dissent from the doctrine that the soul is the ἁρμονία τοῦ σώματος, in fact, to intimate that this is really the central issue of the dialogue. Note also that the refutation of the doctrine comes as a surprise to Cebes, 95 *a*, θαυμαστῶς ὡς παρὰ δόξαν.

[2] *Rep.* 596 *a*, ἀρξώμεθα ἐπισκοποῦντες ἐκ τῆς εἰωθυίας μεθόδου· εἶδος γάρ που τι ἓν ἕκαστον εἰώθαμεν τίθεσθαι κ.τ.λ.; *b*, οὐκοῦν καὶ εἰώθαμεν λέγειν ὅτι ὁ δημιουργὸς κ.τ.λ.

[3] With regard to the εἰδῶν φίλοι it is enough to remark here that their position differs from any which is ascribed to "Socrates" in any Platonic dialogue by its absolute dualism. Their theory is that there is a world of mere γενέσεις, which we "participate in" with our *body* by means of sensation, and also another world of incorporeal real being which we apprehend by our *soul* through reasoning. Thus it appears that they look upon sensation as a purely physical process, and recognise only reasoning as psychical. From the silence of Plato it must be inferred that these "friends of εἴδη" know nothing of that positive relation between the worlds of Being and Becoming which Plato calls μέθεξις and παρουσία, and consequently that with them the realm of γένεσις cannot be thought of, as it is in the *Republic*, as something half-way between Being and Non-being; it must be opposed absolutely to τὸ ὄν as something which "is not". This, I take it, is why the final refutation of their position consists in insisting upon the inseparability of the νοῦς which apprehends εἴδη from ψυχή, which has, of course, for Plato also the inferior function of forming correct opinion based on sensation. ψυχὴ is here, as regularly in Plato, the intermediary between the two worlds, being at once the apprehender of εἴδη and the universal fountain of becoming. If this interpretation is correct, the doctrine of these friends of εἴδη must be a much more unqualified dualism than anything which Plato has ever ascribed to "Socrates," and consequently the criticism of the *Sophistes* cannot possibly be directed against Plato himself, but must be aimed at some one who, to put it crudely, had held the "Ideal Theory" without includ-

point fully here, but to me, as to Prof. Burnet, it seems evident that the only way to make sense of all this is to suppose that the general theory of εἴδη was, what Plato always represents it as being, an inheritance not only of Plato himself but of a number of allied thinkers from Socrates and his Pythagorean friends. Plato, in fact, no more *invented* the εἴδη than Kant invented the distinction between analytic and synthetic propositions or Leibniz that between necessary and contingent truths. And we may reasonably believe that the greater part of the *Phædo* is genuinely historical.

(2) As to the character of the supposed ecstatic vision Mr. Temple has, I think, gone wrong by not attaching sufficient importance to a striking peculiarity of all the passages he cites. In all of them "the language of initiation" is freely used to describe the passage from intellectual darkness into the light of truth. And in this simple fact lies, I think, the whole explanation of the phrases on which his theory rests. Plato is thinking of the actual scene in which the "initiate" were suddenly introduced into the brilliantly lighted hall at Eleusis to witness the sacred drama. Hence the ἐξαίφνης κατόψεται of the *Symposium*, the bedazzlement of the soul when first delivered from prison in *Republic*, VII., and the imagery drawn from illumination in the *Phædrus*.[1] All this is part of the symbolism: what it symbolises is a truth entirely independent of

ing in it a doctrine of *μέθεξις*. In the present state of our knowledge, as it seems to me, everything points to Euclides as the person whom Plato has chiefly in view, though the metaphor of the γιγαντομαχία absolutely compels us to suppose that the criticism is meant to apply to a whole body of thinkers.

[1] For allusions to the "mysteries" in the *Phædrus cf.* especially 250 *b*, *c*, κάλλος δὲ τότ' ἦν ἰδεῖν λαμπρόν, ὅτε σὺν εὐδαίμονι χορῷ μακαρίαν ὄψιν τε καὶ θεὰν . . . εἰδόν τε καὶ ἐτελοῦντο . . . ἦν ὠργιάζομεν ὁλόκληροι μὲν αὐτοὶ ὄντες . . . ὁλόκληρα δὲ καὶ ἁπλᾶ καὶ ἀτρεμῆ καὶ εὐδαίμονα φάσματα μυούμενοί τε καὶ ἐποπτεύοντες ἐν αὐγῇ καθαρᾷ, καθαροὶ ὄντες, and 254 *b*, καὶ πάλιν εἶδεν αὐτὴν μετὰ σωφροσύνης ἐν ἁγνῷ βάθρῳ βεβῶσαν. It is perhaps a confirmation of my view that the whole theory of the philosophic ἔρως goes back to the historical Socrates that the comparison of the "philosophic life" with the initiation into the "mysteries" is made prominent in the *Clouds*. See the scene vv. 254 ff., where Strepsiades is formally "inducted" into the school of Socrates by a rite of θρόνωσις, especially vv. 258-259, πάντας ταῦτα τοὺς τελουμένους ἡμεῖς ποιοῦμεν. It should be noted also that the *Phædrus* does not represent the experience of the lover as a necessary stage in the progress towards the beatific vision of "what is". Beauty, though the most impressive, is not the only εἶδος which can awaken the soul from its mortal sleep; 250 *b*, δικαιοσύνης μὲν οὖν καὶ σωφροσύνης καὶ ὅσα ἄλλα τίμια ψυχαῖς οὐκ ἔνεστι φέγγος (another term borrowed from the "mysteries") οὐδὲν ἐν τοῖς τῇδε ὁμοιώμασιν, ἀλλὰ δι' ἀμυδρῶν ὀργάνων μόγις αὐτῶν καὶ ὀλίγοι ἐπὶ τὰς εἰκόνας ἰόντες θεῶνται τὸ τοῦ εἰκασθέντος γένος. Thus there is a harder and less-trodden path to heaven than that of the παιδεραστήσαντος μετὰ φιλοσοφίας, and it is this harder road which is trodden by the statesmen of the *Republic*, and the Socrates of the *Phædo*. Thus, the *Phædrus* gives no support to the theory that παιδεραστία is, for Plato, "the way to the highest spiritual experience".

the employment of 'ecstasy' as a means to attain the highest knowledge. The point is simply that though it may need a long and painful process of reflexion and analysis to prepare the mind for the apprehension of a great axiomatic truth, that truth, when perceived, is apprehended by a direct and immediate intuition; it is *νοῦς*, as Aristotle puts it, which is *τῶν ἀρχῶν*.

(3) That Plato's supposed ecstatic vision was the origin of the Ideal Theory cannot, of course, be true, if the doctrine of *εἴδη*, in its general outlines, is pre-Platonic, and belongs to a whole circle of thinkers, partly of Pythagorean affinities, among whom Socrates is the central figure. Of course, it might still be urged that the doctrine arose from an experience of the kind described by Mr. Temple, with the difference that we should have to ascribe the "vision" to Socrates, or some contemporary of Socrates, and not to Plato. But here again we have to reckon with the evidence of the *Phædo* which makes directly against any theory of this type. Mr. Temple has, in part, seen this himself, since, as his note on page 506 of his article shows, he is alive to the difficulty which would be created for him if the *Phædo* should turn out to be an earlier composition than the *Symposium*. That difficulty would, indeed, be much more serious than he is willing to allow, since, though the *Phædo* recognises an ideal *καλόν*, it gives *τὸ καλὸν* no exceptional place in the system of *εἴδη*, and is much more completely dominated by the concept of *εἴδη* of a purely mathematical kind, such as *αὐτὸ τὸ ἴσον* and the "Ideas" of the series of integers.

Even this is, however, a minor point. What is of fundamental importance is the biographical narrative put into the mouth of "Socrates," the only passage in Plato in which anything is said about the history of the theory of *εἴδη*. Plato there positively asserts that Socrates betook himself to the theory of *εἴδη* as promising such a teleological interpretation of the Universe as he had once hoped to find in the physics of Anaxagoras (*Phædo*, 99 *d*-100 *a*). (Note that he nowhere says that even Socrates actually originated the theory for himself, though his language certainly admits of that interpretation.) The account here given seems to me quite incompatible with the view that the belief in the *εἴδη* owed its existence, in any marked way, to ecstatic and extra-normal experiences on the part of any one: it is given by Plato in great detail, and apparently in all seriousness, and I submit, therefore, that it has the best of claims to be regarded as a piece of authentic history. The only possible reason for rejecting it seems to be the uncritical assumption that the "Socrates" of the dialogues is an imaginary personage, employed by Plato to express his own opinions, and that therefore the professed account of his mental development given in the *Phædo* must be merely imaginative. But this assumption, when looked into, has nothing in its favour, and everything against it. The part of the narrative which describes the early interest of "Socrates" in the theories of the

physicists, and, in particular, those of Diogenes, and his anticipations from the work of Anaxagoras, fits in exactly with the state of philosophy at the time when Socrates was a young man, and would be perfectly ludicrous as a description of the state of philosophy in a later generation.[1] Its chief points, moreover, can be completely confirmed from the Aristophanic caricature in the *Clouds*. Hence we have really no alternative but to accept at least the first half of the story as a faithful account of facts, and, this being so, it is almost impossible not to take the same view of the latter half. In a work now in preparation I hope to argue this point more in detail, and to do something towards dispelling the misconceptions which have been created by the curious prejudice that the "Socrates" of Plato must be unreal because he is interesting, but the "Socrates" of Xenophon real because he is common-place and a bore. Though even if the narrative of the *Phædo* had Plato himself for its hero, it would none the less leave no place for the supposed "ecstatic vision" as a decisive factor in the development of the "Ideal Theory".

(4) It seems to me that the assertion that Plato regards *παιδεραστία* as "*the* means" whether we are to understand by this phrase "the only means" or "the best means" "to the highest spiritual experience" is in conflict not only with other dialogues, but with the very passage in the *Symposium* upon which Mr. Temple's theory is based. If Plato held this view, why has *παιδεραστία* absolutely no place whatever in the very detailed exposition of the way to "the highest spiritual experience" prescribed for the philosopher-statesmen of the *Republic*? It is not by mystic revelations in moments of sexual passion, but by a long and steady process of analysis of the concepts and methods of science that the soul which has escaped its prison is there made meet to look upon the "Form of Good". So, too, in the *Symposium* itself all possibility of such sexual excitement has long been left behind before the philosopher "suddenly beholds" the supreme Beauty which is everlasting. The vision comes, not in the moment of passion, but only when what the vulgar understand by "love" has long been left behind. The raptures of passion have first to be despised as "mean and of no account," and the beauty of *all* fair forms to become the object of love. Then we have to ascend by degrees to the nobler love of the beauty of the soul; thence to the discernment of comeliness in "pursuits and laws". Even so the hardest part of our pilgrimage from earth to heaven lies before us. We

[1] If the narrative were, as is often asserted, an account of Plato's own mental growth, it would be inexplicable that it should contain no reference whatever to the ideas of the "Sophists," and in particular to the *ἄνθρωπος μέτρον* of Protagoras. The questions which the youthful Plato would have found "live" issues were such as these, "Is all virtue knowledge?" "Can virtue be taught?" "Does goodness come by nature?" not problems about the shape of the earth, and the nature of "that with which we think".

have yet to learn to discern beauty in the structure of science,—a task for which, it will be remembered, Plato in the *Republic* allows his picked students fifteen years as a reasonable period—and it is only then that we find ourselves at last on the threshold of the house of the heart's desire. Mr. Temple's theory would suppress all these intermediate stages of the ascent; he would have the lover leap at once from the lowest to the topmost rung of the ladder which leads from earth to the "place beyond the skies". Unless I have entirely failed to learn Plato's lesson, the city in heaven is not thus to be taken by violence. So again with the famous passage of the *Phædrus*. The passion of the lover for an earthly love may indeed, if diverted from an evil outlet, be the first step towards revival of "the memory of the antenatal vision," but it is nowhere said that the pilgrimage to God's house can be taken in a stride. The soul's "wings" begin to grow again, but we are not to suppose that they are full grown in a moment. And the complete exclusion of παιδεραστία from the *Republic* (the trifling concession made at 468 *b-c* to the specially distinguished warrior rather strengthens my case than weakens it, from the tone of perfunctory indifference with which the whole subject is treated) would seem to show that Plato does not regard it even as a *necessary* first step in the philosopher's "Progress from this world to that which is to come".

In conclusion, let me just remark, that Mr. Temple gives no ground for his adhesion to the wild theories which represent Plato as having in later life "torn in shreds his proudly built philosophy," beyond the assumption that the criticism of the *Parmenides* is directed against a doctrine which is specifically and exclusively Platonic. If the general conception of Plato's relation to his immediate predecessors which has been suggested in this Note should prove to be correct, as I trust it will, this theory, like so many other theories about Plato, will fall to the ground. It will follow that what is criticised in the *Parmenides* is a doctrine already generally current and accepted by a whole group of thinkers who were gathered around Socrates, exactly as has been already urged by Prof. Burnet. Plato cannot, in fact, have attacked "Platonism" in the *Parmenides*, because before the *Parmenides* and *Theætetus* "Platonism" as a distinctive philosophical doctrine did not exist. Of Plato's earlier works the statement of the Platonic *letters* that they are not "Plato" but "Socrates freshened up" will, in the main, be the truth.[1]

A. E. TAYLOR.

[1] It is worth noting that the repeated occurrence of such phrases in the *Epistles* goes some way towards affording evidence of their genuineness. If our view of the relation of Plato to his master is in the main correct, such an expression would be both possible and natural in Plato's own mouth at a time when the *Philebus*, *Timæus* and *Laws*, and possibly the great 'dialectical' dialogues were unwritten. It is much more unlikely that a forger, with the whole series of Plato's works before him, should have thought of making such a remark.

HUMANISM AND INTUITIONISM.

RELUCTANT as I naturally am to deprecate research into the philosophic affinities of Humanism, and great as was the interest with which I read Mr. Walker's ingenious paper in N.S., 67, I cannot honestly advise our critics to commit themselves very deeply to the line of argument it advocates.

The reasons for this advice are (I.) that Mr. Walker has wholly overlooked important differences between Humanism and the Intuitionism of Martineau, and (II.) that he seems incautiously to have adopted some of the most indefensible of the misconstructions of Humanism which are still current.

I.

(1) While it is perfectly true that Intuitionism makes morality, as Humanism makes truth, depend on judgments of Value, yet there is an important difference in their respective conception of these primary values. For though there are no intrinsic reasons why intuitions should not be treated empirically, in all extant intuitionism judgments of value are taken to carry with them a guarantee of their validity which seems to be essentially *a priori*, and Martineau's originality lay merely in his gallant attempt to overcome the empirical contradictions arising out of conflicting intuitions, by arranging the intuitive springs of action in an order of merit. Hence it is of the essence of ethical intuitionism both that the formal *claim* to value should be taken as assurance of validity and that no appeal to the *consequences* of acting on intuitions should be allowed to reflect upon and to determine their value.

Humanism, on the other hand, has the utmost respect for intuitions of all sorts. It regards them as psychological facts of the greatest interest, importance, and significance. It would not attempt to do without them either in ethics or in logic. It would define them as immediate judgments of value. But it would respect without adoring. It could not refrain from examining claims before admitting them as infallible guides to validity. It would regard it as uncritical to treat them as anything else than psychological. In the first instance at any rate it would treat the claims of Intuition as something which might require confirmation by experience. In this respect truth-claims and intuitive moral judgments are fundamentally alike: both are made constantly and

freely and spontaneously, and are chronologically prior to the sciences which criticise them. Hence they form the data from which a prudent theory of logical and ethical values will set out. But the mere fact that such claims are made does not prove that they are infallible: they may still require confirmation, and God knows they mostly need it!

(2) Now this confirmation is conceived differently in the two systems. For whereas in ethical intuitionism it comes once for all (as we saw) *before* experience in the table of the priority of the springs of action, for logical humanism it comes gradually *in experience*, in the empirical consequences of acting out the various claims. Mr. Walker has apparently quite forgotten this empirical side of Humanism.

(3) Yet herein lies the answer to his complaint that no attempt is made to tabulate the *a priori* values of logical intuitions. If humanism attempted anything so foolish as to construct a preliminary scale setting forth the relative importance of different satisfactions, it would first of all have to cease to be empiricism, and in the next place have to stultify itself by laying claim to a knowledge of absolute values, which no one has ever yet got hold of, and the despair of which has manifestly driven the chief modern exponents of absolutism over into utter scepticism.

(4) Mr. Walker has unfortunately failed to observe that humanism commits itself as little to an insuperable dualism between the 'true' and the 'right' as it does to a vain attempt to reduce the right to a matter of mere intellect. By calling 'truth' logical value humanism includes it in the same genus with 'right' and 'good' and 'beautiful' and 'pleasant,' and accounts for the persistent habit of all men to transfer the terminology of one species of value to another. This, however, is not to confuse, but to give a clue to current confusions, and why any one should regard it as in any way derogatory to the intellect baffles my understanding.

II.

(1) Why then Mr. Walker should assent to this baseless calumny, and accuse us of 'degrading' and 'belittling' the human intellect rather than of restoring its self-respect together with its efficiency, it is hard to conjecture. If he would try to discount his bias and think the matter out, he could not but perceive that the real degraders and belittlers of the intellect are those who alienate it from life, set it useless, meaningless, and impossible tasks, and finally denounce it as incompetent when it refuses to perform them.

(2) At any rate until such time as intellectualism has excogitated an account of truth that will not be either manifestly incoherent or else formal and unmeaning, and will succeed in discriminating truth from error and overcome the scepticism to which Messrs. Joachim and Bradley have now openly confessed, humanism can

hardly be blamed for renouncing the presumptuous attempt to say what absolute truth may be, and for confining itself to the humbler task of describing what human truth actually is. And in the execution of this task it will not allow itself to be intimidated by accusations that its truth is 'relative' and 'subjective' and 'probable' and devoid of 'objective validity'. If there is any force in these epithets, so much the worse for all human truth, *i.e.*, for all the truth we any of us have. Scepticism, which by Mr. Bradley's own confession has already devoured the Absolute, will then triumph over man also. But I cannot see that these epithets do anything but beg the question. What is 'relative' to man is at any rate related to him. What is 'subjective' is something *we* can possess. Even a probable truth seems preferable to an impossible ideal. As for 'objective validity' (if it is properly defined), our truth has quite as much of it as we need or it needs, if it is to be progressive. It is preposterous to define 'objectivity' in such a way that no objects of human thoughts can attain it. All this flinging about, then, of dyslogistic terms does not alter the facts that human truth we have, that no other seems possible, and that we may as well get reconciled to its character.

(3) Further reflection upon this situation may possibly convince Mr. Walker that humanism has no need to impinge on either horn of his dilemma, 'either a return to absolutism or a return to Aristotle'. It is protected against the fury of the bull that bears them both by an impassable chasm. For (*a*) the Absolute does *not* "provide the common ground" truth is supposed to presuppose, just because it is plainly impotent to *get to* the position of human knowledge. It can, therefore, neither explain nor confirm nor invalidate it. Its "immanent revelation of itself in finite centres of consciousness" would *not* "secure an approximate conformity of their thinking to its own". For the vital connexion is merely a dogmatic assertion and a matter of faith. No one has ever been able to think the relation of the Absolute to the "finite centres". All the attempts to do so have ended by annihilating either the Absolute, or the finite centres, or both. Moreover, even if the relation could be thought, it would leave the actual difficulties of knowledge just where they were before. We should have no new means of getting human thoughts to converge towards an "approximate conformity". For the thought that the thought of each of us is approximately conforming to the Absolute, besides being the mere postulate of an unverifiable faith, a mere *credo quia impossibile*, provides no standard whatever for the correction of human errors. We shall not be better disposed to acknowledge our errors by the belief that we are vehicles for the enunciation of absolute truth. Nor could it reasonably serve as an ideal for us, because we should have to admit that we in our finitude were necessarily precluded from realising it. Instead of helping, therefore, it would hinder, by implanting in us the discouraging conviction that abso-

lute truth was the only truth worth having, but that man *qua* man could not possibly attain it.

(*b*) Aristotelian realism is nothing like so bad. It is no hindrance: but it is no help. The 'objective validity' to be secured by grasping "objective entities and their relations" is a harmless notion. But it is quite unmeaning so long as no one is prepared to tell us *when* the 'object' we are contemplating is an 'objective entity' as defined, and not a 'subjective' approximation to it that will have to be transcended with the next step forward. What then is the use of talking about independent 'objects,' without being able to say either how we are to know when we have got them, or how once grasped by human thought they can continue to be 'independent'?

(4) It is quite a mistake, however, to attribute to humanism any hostility to any sense of 'object' which performs any actual function in our knowing. There is no philosophic position which is less open to the imputation of solipsism, or better in accord, if not with "the philosophy of common-sense" (p. 315), yet with common-sense itself. Nor will it shrink from 'agreeing' with Aristotelian and Absolutist that "the knowledge of subject and object is immediate and is simultaneously developed" (p. 312). It will insist only on adding (1) that to a human 'subject' there must 'correspond' a human 'object,' (2) that it has never asserted the life we know to be merely an 'inner' one, and (3) that the 'immediate knowledge' alleged does not carry us out of the region of 'claims'. It will mildly inquire how self-evident intuitions which are true are to be discriminated from those which are false, except by experience of their consequences.

After that it will set itself seriously to solve the problem which no form of intellectualism has so far recognised as a problem, *viz.*, as to how among the mass of 'objects' which all alike claim 'reality,' we contrive to *select* those which are *really real?* When Mr. Walker has discovered or devised a better, surer and more expeditious way of doing this than ours, he will not find humanists slow to welcome it. But until he has perceived that this is the vital problem, he can hardly claim to have adequately differentiated himself from the multitude of those who do not yet perceive the point at issue.

F. C. S. SCHILLER.

VI.—CRITICAL NOTICES.

The Roots of Reality. Being Suggestions for a Philosophical Reconstruction. By Ernest Belfort Bax, Barrister-at-Law. Pp. xii, 331. London: E. Grant Richards, 1907.

In the introductory chapter of his book Mr. Bax lays down certain fundamental doctrines, which he regards as the assured result of modern philosophical Idealism and the necessary starting-point of all future construction. The most important of these doctrines are as follows: 1. "Reality is synonymous with conscious experience possible or actual." 2. "The self consistency of consciousness as a whole constitutes the ultimate test of truth." 3. "An analysis of consciousness discloses that every conscious experience or reality cannot be analysed into less than two elements"—a logical and an alogical element. The first two doctrines are familiar enough; it is the third that gives distinctive character to Mr. Bax's philosophical view, and it may be said in fact to constitute the main theme of the book. The author's constant endeavour is to maintain against the panlogism (or "pallogism" as he prefers to say) of the Hegelian school the necessity of recognising an alogical element pervading or underlying all reality—an element which can never be fully brought under the categories or relationships of thought.

How far the argument is really relevant to Hegel himself may be questioned, for what Mr. Bax actually criticises is rather the sort of modified Kantianism that is represented by Green, against whom he insists in the usual way on the place of feeling or the material element in experience. Mr. Bax's own position might perhaps be described by way of contrast as a Kantianism that has been much influenced by Schopenhauer. For, while he identifies reality with actual or possible experience, he finds the source of all experience in an ultimate or transcendent Subject "out of which all consciousness wells up"—a Subject which is at all events comparable with Kant's own Thing-in-itself and with Schopenhauer's Will, though not identical with either of these conceptions. This Subject is conceived, in dialectical fashion, as first giving itself a content or object in feeling or the alogical, and then reacting upon this content by its logical or formative activity. Hence reality or experience in all its forms is held to imply always these three elements: "(1) an 'I' as subject which feels; (2) an

opposing feltness, the negation of this 'I' as such; and (3) the reciprocal fixation of the feltness by the subject which feels, and conversely. The first two of these elements constitute respectively the possibility of apprehending and the possibility of apprehendedness. We may term them the *matter* of consciousness. The third element, that of reciprocal relation, which we call thought, reason, or the logical, as *form* of consciousness, completes the primary synthesis—*i.e.*, consciousness-in-general—the universal synthesis which all more concrete modifications pre-suppose. Such, and nothing else, is the ultimate nature of reality. The above synthesis is the eternal framework of reality, and when we postulate reality in any sense whatever, this it is that we wittingly or unwittingly postulate. On close inspection this primordial synthesis resolves itself, strictly speaking, into its primary element, as Fichte showed. Feltness is nothing but a modification of 'I' as feeling, and thought is, again, nothing but the reaction of the *that* which feels upon the *what* of its feltness" (p. 36, *cf.* p. 290).

Such being Mr. Bax's general scheme of the ultimate nature of reality, his main concern, as has been already indicated, is to emphasise the significance of the alogical element or elements in the scheme—a significance which has been unduly minimised or ignored in the more Hegelian developments of Kantianism. In opposition to such developments he seeks to bring out the essential priority of the alogical over the logical, the inability of logical forms ever wholly to circumscribe the alogical matter of reality.

The general tendency of his argument will be most easily seen by referring to some of its applications. In chapter iii. he argues that "in every real process, at whatever stage we choose to take as our starting-point, although there is much in it which is perfectly reducible to law, yet there is always a remainder left over that cannot be reduced to law, or the relation of cause and effect" (p. 82). This remainder must be ascribed to chance, "that element in the reality of change which is irreducible to law or the causal category". Any event, it is argued, when viewed in all its concreteness, is seen to result from the consilience of several distinct causal series. Now, although we can always trace a causal connexion at any given point in each of these series, yet in the fact that all the various distinct series, each of which again involves the consilience of other series, thus coalesce in just this way, *i.e.*, in the event considered "as a *focussing* of an infinite series of events proceeding from 'all quarters,' there is an element of contingency, of chance, of alogicality, in short, utterly irreducible to causality, but which forms, nevertheless, a part of the very essence of the event as *real*" (p. 85). It is interesting to note that Mr. Bax here uses to prove his alogical chance the very same argument as Janet has used to prove final causes.

Again, in chapter vi., Mr. Bax finds in the antithesis of the logical and the alogical a solution of the ethical controversy be-

tween Libertarianism and Determinism. "Reason, in the form of reflective thought, presents our actions to us as through and through necessitated; immediate feeling presents them to us as altogether spontaneous. This contradiction cannot be transcended by thought, since it has its ground in those alogical elements that are prior in nature to thought" (p. 183). "In every moral action, just as in every other event, there is a law-element as well as a chance-element. The general principle of the action can be deduced from the character of the individual performing it, in a word, can be regarded from the standpoint of the category of causation. In so far as this is the case, the individual may be said to be not obnoxious to praise or blame, since his action is determined" (p. 186). But, besides this element of determination by character, "there is the other element in moral action as in every temporal event, spontaneous, aleatory, and altogether irreducible to the principle of causation" (p. 187). And it is to this alogical element in the action that the moral 'ought,' with its praise or blame, alone applies (p. 188). "Every ethical judgment, as such," the author says elsewhere, "is pre-eminently alogical" (p. 318, note). Unfortunately for this solution of the ancient controversy it is precisely with the determination of an action by character, and not with its mere spontaneity or impulsiveness, that ethics connects responsibility and freedom.

In a recognition of the infinity of the alogical Mr. Bax sees a way of escape from some of the most perplexing questions of metaphysics. A great deal turns, he would urge, "upon the distinction between regarding the Absolute as a wound-up whole, a closed system, a finally complete synthesis, and regarding it as principle merely, timeless principle of eternal change in time. If we adopt the latter view, we at once escape the contradictions and inconsistencies raised by the notion of the Absolute as system complete once and for all" (p. 269). "The Absolute, so far from being the unchangeable eternal, is, on the contrary, the eternal principle of change. It is eternally realising itself under ever new forms to which we can assign no finality" (p. 274). Now, that the conception of a timeless and changeless Absolute, seems hard, or impossible, to reconcile with our actual experience of change in time may be admitted, and one may go far with Mr. Bax in his criticism of this conception. What one cannot so easily admit, however, is, that his own conception of a "timeless principle of eternal change in time" is so much better off. It seems no less inconsistent than the other. Mr. Bax himself recognises that the problem of the metaphysical ultimateness of time "confronts us on the very threshold of a thoroughgoing metaphysical analysis," but, since he finds it beyond the scope of his present intentions to discuss the problem fully, we are left in doubt as to the way in which he would propose to develop and vindicate his own conception in view of it.

As a last example we may take Mr. Bax's final word as to philosophy itself. "It might be supposed," he says, "at first sight, that, whatever might be the case with æsthetic beauty or moral goodness, philosophical truth at least had logical reason for its final arbiter. Such is, however, not quite the case. If we consider the matter closely, we shall see that the conviction of the truth of a given philosophical formulation, or, in other words, the conviction of the adequacy of the formulation as expressing in the terms of abstract thought the self-consistency of consciousness, rests in the last resort upon feeling—namely, the feeling of intellectual satisfaction it affords. Hence here also, no less than in the sphere of art or ethics, we are forced back upon the bedrock of the alogical as our ultimate arbiter" (p. 307).

However little one may be inclined to accept Green's version of Kantianism, it seems evident enough from these examples that Mr. Bax's opposed version lays itself open to very serious criticism. That the general aim of his contention against "pallogism" (or "gnosticism," as Prof. Campbell Fraser would say) is right may be admitted. And the main interest of the book certainly lies in the consistent way in which Mr. Bax seeks to follow, through a wide range of philosophical problems, a single line of thought, and in his endeavour to present a version of Kantianism in which the one-sidedness of Green's version will be corrected. It is not possible, however, to regard his conception of the alogical as realising his general aim at all satisfactorily. To begin with, the conception seems not to be distinct in itself. It seems to combine the two inconsistent parts of a presupposition outside experience and a factor within experience. The former is its part, when Mr. Bax emphasises the priority of the alogical and attributes all experience to an ultimate Subject having as its object its own alogical modifications or feltnesses. And the difficulty then is to understand how the subsequent *logical* operation of this Subject can take effect upon, or be related to, an originally *alogical* content. To say that the whole analysis is only dialectical would, of course, be no answer so long as the priority (in any sense) of the alogical is maintained. On the other hand, so far as the alogical signifies only the *matter* of experience as contrasted with its *form*, or the Kantian Sensibility as contrasted with Understanding, it is only one factor in experience, inseparable from the correlative factor; and there is then no ground for attributing to the alogical any essential "priority in value". From this point of view, therefore, it becomes impossible to understand why Mr. Bax should have recourse at all to an ultimate transcendent Subject out of which experience or consciousness has to "well up". If we are to be in earnest with the doctrine that reality is synonymous with conscious experience, it should not be necessary for consciousness (in this sense, in which it is synonymous with reality) to well up from

anywhere. Mr. Bax's argument to the contrary is far from convincing. "A bare subject without object," he says, "may be unimaginable, but it is not in the same way impossibly absurd as is the bare object cut off from the subject. In other words, a system of felt, thought, and willed determinations without a feeler, thinker, or willer, is a sheer contradiction in terms. The object itself is, in the last resort, metaphysically deducible from the subject. The *thought-feltness*, which we term object, clearly has its *raison d'être* in the feeling and thinking agency or subject. Hence the alogical (here the primordial subject) has clearly a presuppositional value, from the metaphysical point of view, superior to that of the logically determined object" (pp. 155-156). This reasoning seems to play fast and loose with the correlation of subject and object. Whatever existence or significance the so-called subject may have beyond the relation of subject and object, this existence or significance is at any rate not that of a subject as such; and the argument, therefore, has changed its ground.

The source of these difficulties is not, I think, far to seek. Mr. Bax, it seems to me, commits essentially the same error of principle as Green himself—that of ignoring, or insufficiently recognising, the difference between what is true of the finite human consciousness and what is true of the universal consciousness which is conceived as free from all finite limitations—an error to which all forms of Kantianism are very liable. In Green's case it is the predicates of the universal consciousness that are transferred to the human without sufficient regard for the limitations of the latter. In Mr. Bax's case it is the other way about. Predicates or distinctions that are obviously applicable to the finite and progressive, but ever incomplete, knowledge of man are uncritically transferred to the consciousness which is all-embracing, and therefore raised above the level of all such distinctions. The universal consciousness, for instance, cannot possibly be regarded as being under the necessity of giving form to an as yet unformed matter. The dualism of form and matter can apply only to a finite or progressive consciousness. There is, however, one advantage of Mr. Bax's insistence on the characteristics that express the finitude of the human consciousness. He tends to be impatient (and rightly so) of metaphysical conceptions in which the problems of our finite experience are evaded rather than answered. A static Absolute, in which all the difficulties raised by our experience of change and imperfection and striving are simply suppressed, receives no favour at his hands. True, his own conception of the alogical can hardly perhaps be said to do more in the end than find a symbol for these difficulties; yet at least it has the value of recognising them frankly and of keeping them prominently before us.

Mr. Bax's book is written in a clear and direct style, and will present no difficulty to the philosophical reader, but I think it is less likely to fulfil the purpose, mentioned in the preface, "of

reaching the average intelligent man, who is now beginning to interest himself in speculative problems". The whole design of the argument, and the numerous allusions which are made to philosophical doctrines, presuppose a considerable knowledge of the history of modern philosophy, which the average intelligent man, even if he does "interest himself in speculative problems," can hardly be assumed to possess, and the lack of which will not be supplied by the very slight and rapid historical sketch given in the introduction. But whether or not Mr. Bax is likely to succeed in this special purpose, his exposition no doubt gains by keeping it in view, and the philosophical readers to whom his argument more properly appeals in respect of its matter will not complain of his effort after a more popular form.

HENRY BARKER.

Human Nature in Politics. By GRAHAM WALLAS, M.A. London: Archibald Constable, 1908. Pp. 301.

A CURIOUS *rapprochement* is to-day observable between a certain section of philosophers and a certain section of men of affairs. For many years, the business of a philosopher—I am speaking of the expert, the whole-hearted academic variety—has been dominated by a conception so highly intellectualistic that the plain man (Mr. Sidgwick's species) has decided that its discussions do not affect him in any way whatever, and has turned to Science which, for a long time, escaped the difficulties that Philosophy felt, by assuming all the fundamentals it needed. To the man of affairs, to the administrator and politician, Philosophy was, indeed, either non-existent or irrelevant, and Science itself valuable only for making and breaking things and providing transit.

The dawn of the twentieth century shows some remarkable transformations. A number of philosophers, some of them learned and acute, and all of them vigorous, have completely broken away from intellectualistic traditions and are explaining our intellectual nature as a means to an *end*, or, rather, a series of *ends* or goals set for us, not by our intellect, but by our desires and feelings. Science has given up dogmatic metaphysic, especially the negative dogmatisms of the nineteenth century—of course I am speaking of the foremost scientific thought only—and limits itself, despite a few speculations on the ultimate nature of Matter, to correlating facts; and is not now so prone as heretofore to provide us with ideals of life.

As a sign of the remaining transformation scene—may this at least not be followed by a harlequinade—comes Mr. Wallas's book. We need more intellect in politics, says he; we want a philosophy, a psychology of politics; it will not do to go on muddling through, and entrusting government to the cleverest manipulators of popular ignorance.

At first sight, there seems little to hope from such changes, they appear indeed largely to cancel one another. But I am convinced that what we have before us to-day in the world of thought is much more a *rapprochement* than a mere renewal of the conflict under new banners between emotionalism and intellectualism. It certainly appears somewhat quaint just when an important philosophical school is proclaiming the bankruptcy of intellectualism, and when science is disclaiming the right to dictate ideals, for a practical politician and administrator to step forward and say in effect that the people are perishing for lack of knowledge, and that the highest and driest of scientific methods—that of quantitative research and summation—is the *sine quâ non* of improvement in methods of government. It would appear that one would need to perform feats of saltation almost Chestertonian in complexity to accomplish a reconciliation between such views as these.

That, however, a *rapprochement*, if not a reconciliation, is actually taking place is evident, I think, from three indications.

Firstly, from the whole pragmatic movement in philosophy.

Secondly, from some marked tendencies of modern psychology.

A *rapprochement*, I said; and two months after this review was written appears a book by Mr. McDougall on Social Psychology, whose task is to trace more or less in detail the origin and growth of the principal tendencies of the human mind. The man of science concludes almost at the point at which the man of affairs begins. The last paragraph in his book might well stand as the text of Mr. Wallas's first section.

"Our brief review of the social operations of the primary tendencies of the human mind is finished. Enough, perhaps, has been said to convince the reader that the life of societies is not merely the sum of the activities of individuals moved by enlightened self-interest, or by intelligent desire for pleasure and aversion from pain; and to show him that the springs of all the complex activities that make up the life of societies must be sought in the instincts and in the other primary tendencies that are common to all men and are deeply rooted in the remote ancestry of the race."

And if our memory serves us for ten years or so, we remember the valuable book of Mr. H. R. Marshall—the American psychologist—on Instinct and Reason, whose thesis, like that of Mr. McDougall, is the enormous range of the instinctive and irrational in human minds.

And thirdly, from the unmistakable indications that the mental conditions which produced Mr. Wallas's book are to-day by no means unfrequent among educated politicians and administrators. They are not an idiosyncrasy, a set of abnormalities specifically characteristic of Mr. Wallas. As I have said, the mental state he portrays is by no means uncommon; though he is the first, as far as I know, to give poignant and sustained expression to it. A political worker with an Oxford training, with an intense realisation

of the State as an entity to which passion (in Mr. Shand's and M. Ribot's sense) is attachable, and for which indeed it provides a glorious inspiration; thrown back somewhat by the discovery that popular compulsory education, from which so much was hoped, does not provide us with reasonable voters; alarmed at the success with which voting is manipulated by all sorts of private and corporate interests, many of them inimical to the State; yet shuddering away from the path so often followed by the disillusioned—the path of quietism and more or less cynical resignation to inevitable hopelessness—thus Mr. Wallas as revealed by this book.

Must we leave the political field to the manipulator of votes on the one hand, and to the ignorant optimist on the other? Must we shut our eyes if we wish to continue to hope? Is a faith in human betterment only possible to those who fly in the face of the facts? Must those who alone are competent to measure detailed facts lose their sense of the whole in knowledge, and their love of the State in action?

Mr. Wallas tries to answer all these questions in the negative. He often stands on very narrow ledges, but this makes his book all the more valuable; as one feels that he has gone about talking to competent thinkers of all kinds, putting his ideas before them, and listening and learning from their answers. Often indeed he embodies their answers in paragraphs which are in antagonism to the main current of his own thought. But he never leaves one thinking that the objections are more than qualificatory; one is steadied and slowed down, but never hurled off the track.

The whole scope and process of the book is aimed against those who, following the early idealists and political thinkers who translated their wishes into facts, deal with Politics and the man as politician with simplifications so violently unreal that they never get back to the complexity of nature. This state of mind is not unknown in sciences other than that of Politics, but in the latter it is held to be especially dangerous. And too often there is, with the politician, a violent disruption between his earlier and his later knowledge; he finds the "political man" so flagrantly unreal and, by mere dint of practice, so changes his view as to what the political man is, that he sets aside his books and just gets forward, if at all, by means of practical "tips" from practical people.

Just as in Education, some of us are striving to see more clearly what the facts are, so that our theories may be in touch with reality and indeed be, in very truth, reality understood; so in Politics, Mr. Wallas deprecates the sundering of theory and practice as fatal to both. He sets out by asking us to consider the nature of the impulses which drive us on to action, and here he is everywhere indebted to Prof. James's *Principles of Psychology*. He has a comprehensive grip of what an acceptance of evolutionary principles involves; progress is perhaps assured, but only in so far as we consciously aim to supplant the cruder, unreasoning activities

of a state of nature. Perhaps after all—it is too soon to speak with confidence—there may be, though this is not the author's assertion, a secular tendency to variation which is not quite unbiassed nor even dependent on selective breeding; and if so, progress will almost certainly be regarded as the proper name for the result of this developmental trend. To accept this tendency as an ideal, what Prof. James calls, I think, being on the side of the Universe, or, in Mr. Spencer's words, "becoming a self-conscious agent in the evolution of the universe," will always be popular. The author has not referred to this conception of progress; but, if he had, he would unhesitatingly have rejected it. For the scientists in Politics are indeed to-day *Athanasius contra mundum:* not for them is the easy acquiescence in the thing that is, or is becoming; it is not for them to range themselves among the ranks of a large and constantly increasing army. Fully recognising, and, indeed, dragging into the full glare of day, so that he who runs may read, all those inherited tendencies to impulsive action and to inconclusive thought which make democracy so dangerous—a section dealing with names, which, despite Shakespeare, affect the scent of the political and even of the economic rose, supplies good illustrative matter for the psychologist—Mr. Wallas asks us in Part II. of his work whether there are no hopes of change, not merely in a cosmic, but in a moral, sense. He thinks there are. But we shall have to face the facts. We shall have to ask ourselves very seriously whether representative government—even if, unlike Plato, we grant the consent of the governed to be necessary to good government—does really, under present arrangements, give us reason for inferring that there is any real consent. And above all we shall have to make the change which Education in England, despite strong advocacy, refuses to make, but which has begun in Political Administration, of quantifying all our conceptions and working up from the almost inextricable tangle of Nature to simpler summarised generalities, all of which must be held together in mutual quantitative delimitation. "Am I easier to be played on than a pipe?" asks Hamlet. Well, if the economic aperture was allowed free vent it was once thought that man's tune would be sure to be all right; but now we want exact comparative estimates of all the influences which "call the tune," of which "paying the piper" is only one.

Mr. Wallas then, whilst pragmatist in his method of presentment, is, in the best sense, intellectualist in his method of solution, not in the sense of worshipping the idealist's Absolute, which swallows up one's difficulties, but by demanding that they should be patiently worked out and evaluated by the strictest methods known to Science. But the pragmatist and emotionalist may answer, "What is this but to get back again to the old deification of Reason; we are to find our Reasons by quantitative summation instead of by insight, that is all! How will that help us to move

forward? And will not the true politician, on this view, become merely an addition to the present army of specialists, who, absorbed in their own pursuits, greedy for facts, incapable of speculation, have bidden Utopia good-bye for ever, like Mr. Wells's Washington friends?" No, says Mr. Wallas in effect; passion must beat pulsatingly through all; we must love the State, not with a blind, unseeing love, but with a love that notes the sparrow's fall, and gives exact numerical estimations (fortunately becoming a less arduous task) of the very hairs of our heads. Only then, with such a fusion of thought and feeling, can any man hope to be of real service either to his city, to his country, or to that vaster Empire of the World which some of us at times still dream of as the realisation of the kingdom of heaven which is said to be within us.

To all those—and surely their number is increasing—who hope that our emotions and our most severely rational conclusions will not for ever remain sundered, and who are willing to take thought that our democratic ship of State may not founder, I heartily commend this book.

W. H. WINCH.

VII.—NEW BOOKS.

The Philosophy of Gassendi. By G. S. Brett. London: Macmillan & Co., 1908. Pp. xlv., 310. Price 10s. net.

Mr. Brett's main object in publishing this monograph is to convince philosophical students that the thought of Gassendi (by the way, ought not the preference of this way of writing the name to have received some sort of justification?) has a much greater value for our own time than is commonly suspected. The exact nature of this value is unfortunately made difficult to discover by the author's rather vague and obscure style as well as by the method of exposition he has adopted. In the greater part of his book he has chosen to reproduce Gassendi himself in free paraphrase relieved by an occasional excursion into criticism, with the result that the reader is constantly in doubt how far Mr. Brett himself acquiesces in what he delivers without comment as the doctrine of the French philosopher. It would, I should say, have been far better to make a clearer separation between the paraphrase and the criticisms, so that readers might have known more definitely what the author's own precise standpoint is. This might easily have been effected without unduly increasing the bulk of the book if Mr. Brett had been a little less chary in the matter of footnotes. A more serious defect is that the author's criticisms are too much of the nature of *obiter dicta* on particular points; there is little evidence of any serious attempt to examine the system of Gassendi as a whole in respect of its connexions with the past and its direct influence on the future. Indeed, I doubt if Mr. Brett's knowledge of the history of thought would have proved quite equal to the execution of the task. In dealing with the relation of Gassendi to the past, the essential requisites are a thorough knowledge of two things, the ancient Atomistic systems and the Aristotelian doctrine in the form in which it had been consecrated by the Church of the later Middle Ages. Now Mr. Brett's knowledge both of Greek Atomism and of mediæval Aristotelianism seems, from indications scattered throughout his book, to be rather slender. *Cf.* his scanty remarks about Leucippus on page xx, and his "hedging" at pages xxi-xxii on the all-important question of the kind of motion ascribed by Democritus to his atoms, and his amazing attempt to make it appear that the Epicurean "declination of the atom," the *fatis avolsa potestas* of Lucretius, means a power "saved from the fates in order *to be subject to law*," page 237. Surely Mr. Brett would not have credited Epicurus of all men with the belief in the "reign of law" throughout the universe if he had known or remembered Epicurus' own saying that "it would have been better to follow the tales about gods than to be slaves to the fate of the physicists, for the former doctrine holds out a hope of getting over the gods by worship, but the latter sets up a necessity which there is no getting round". So it looks at least suspicious that no hint is given on page 3 that the logical

canons there quoted are taken verbatim from the Greek of Epicurus, and that we are told at page 282 that "the atoms of Democritus were meant to be physical points". Again it should have been pointed out that the whole doctrine of the "rational soul," which Mr. Brett finds it difficult to bring into connexion with Gassendi's generally materialistic psychology, is taken over bodily from the traditional Aristotelianism, with the inevitable consequences which always arise in the attempt to make an eclectic fusion of two radically inconsistent systems. And if Mr. Brett gives us no adequate account of the way in which Gassendi attempts to construct a doctrine of his own by grafting Aristotelian Psychology and Ethics on a stock of revived Epicurean Atomism, neither does he seriously consider the relation of Gassendi to his great contemporaries, Galileo and Descartes. If he had done so, he might have discovered that the prolixity and irrelevant erudition of Gassendi are not the only reasons why his work has been forgotten by posterity, while that of Galileo and Descartes has remained perennially fruitful. For Descartes in particular Mr. Brett seems to cherish a certain dislike, but his antipathy should not blind him to the facts that Descartes had at least the merit of possessing new ideas and a new method, and that the method at any rate led to the creation of modern geometry. And it is a serious flaw in Mr. Brett's book that no consideration is given to Gassendi's very striking criticism of the new Cartesian ideas in his "objections" to the *Meditations*. We could easily have spared many pages of paraphrase of the details of Gassendi's physics or half-hearted criticism of his not very original views about space and time, in exchange for an examination of his attitude to the "ontological argument" which constitutes the very heart of Cartesianism. The discussion of later doctrines in which Mr. Brett detects atomistic tendencies, such as those of Leibniz and Lotze, given in the "General Review" at the end of the volume, is much more satisfactory, and, for my own part, I find the pages devoted to criticism of Lotze incomparably the best part of the book. Only one does not quite see what reason there is for their being included in a work on Gassendi. If Lotze finds a place there simply on the ground that his theory may be said, in a way, to include an element of spiritualistic atomism, why should Herbart be passed over in silence? But why does Mr. Brett hold that Lotze is advantageously distinguished from Leibniz by the fact of his being a student of physical science? Was Leibniz not a student of physics and biology (p. 288)? On the whole I cannot feel that Mr. Brett has any new light to throw on Gassendi's fundamental positions which seriously affects the estimate usually given of him in the current histories of philosophy. The author's style is unfortunately neither elegant nor even always grammatical (*e.g.*, he uses "like" as a conjunction, p. 276), and he has an irritating weakness for unnecessary and uncouth verbal coinages, such as "appulse," "multiplex," "be-ent".

A. E. TAYLOR.

Modern Classical Philosophers: Selections illustrating Modern Philosophy from Bruno to Spencer. Compiled by BENJAMIN RAND, Ph.D. (Harvard). London: Constable & Co. Boston and New York: Houghton, Mifflin Co., 1908. Pp. xiii., 740. Price 10s. 6d. net.

Students at the universities will undoubtedly be grateful to Dr. Rand for this convenient volume, in which they will find brought together texts which have had to be sought hitherto dispersed through a score of different books, and teachers of the History of Philosophy will be equally glad of the appearance of so convenient a companion to their lectures.

The selections from continental thinkers have for the most part been taken from translations which have already won recognition for their accuracy and literary merit, and the fidelity of those which appear here for the first time is reasonably guaranteed by the name of Prof. Royce. If there is a feature of the work which is open to criticism, it is the rather arbitrary conception by which the editor has been guided in his selection of texts. It is surely a mistake, in view of the great historical importance of the Herbartian influence upon German thought, that Herbart should be entirely ignored, and the whole of German post-Kantian philosophy represented exclusively by extracts from the "idealist" writers, Fichte, Schelling, Hegel and Schopenhauer. I cannot help thinking that it would have been well worth while to include a dozen or twenty pages of characteristic passages from Herbart at the cost of entirely excluding Schelling, and even, if necessary, Schopenhauer. In the earlier sections of the volume, too, it is a pity that Hobbes is represented exclusively by his psychological and social doctrine as given in the opening chapters of *Leviathan;* enough should have been included from the *De Corpore* to give the student some insight into the peculiarities of Hobbes's nominalistic logic and his doctrine of space and time. And is it too much to ask that when the book reaches its inevitable second edition the method of Descartes should be illustrated by selected passages from the *Regulae* rather than by the first two divisions of the *Discourse?* As a mere introduction to the "Geometry" which it accompanied, the *Discourse* is significant enough, but when taken by itself as a substantive treatise on scientific method, it might almost be said to conceal more than it reveals. I would also suggest that it is provoking to find the proofs of the existence of God in the third *Meditation* given without any indication that they are intended to lead up to the crowning "ontological" argument of the fifth, and that the presentation of Locke's theory of knowledge is lamentably imperfect owing to the omission of the chapters which deal with our "demonstrative" knowledge of the existence of God, and our "sensitive" knowledge of external nature. The sacrifice of the long extract from Condillac about the animated statue would probably make it possible to include all the additional matter for which I am pleading without materially increasing the bulk of the volume, and the student would be a considerable gainer by the exchange. Or, if still more space is needed, it might be got by omitting the odd score of pages from Bruno's *Cause, Principle, and One,* with which the book opens. The double omission would perhaps even make it possible to include the important pages of Galileo's *Saggiatore,* which may be regarded as the classical statement of seventeenth-century science on the distinction between primary and secondary qualities and the ideal of mechanical explanation.

A. E. TAYLOR.

The History of a Strange Case. By D. P. ABBOTT. Chicago: The Open Court Publishing Company, 1908. Pp. 50.

The Marvellous Creations of Joseffy. By D. P. ABBOTT. Chicago: The Open Court Publishing Company, 1908. Pp. 24. Illustrated.

Mr. Abbott is the author of a very useful and interesting little book entitled *Behind the Scenes with the Mediums,* which explains from personal knowledge and experience many of the most puzzling mediumistic 'phenomena'. In the first of the above-named pamphlets he reports a brief series of interviews with the 'trumpet medium,' Mrs. Blake. The observations to be accounted for are of two kinds, physical and mental.

The physical phenomena of light and heavy trumpet, floating trumpet and lights are of the ordinary 'trick' sort. The voices in the trumpet undoubtedly proceed from the medium's vocal organs and issue from her ear: Mr. Abbott suspects an abnormal Eustachian canal (presumably, a canal that is permanently open) and an opening in the neighbourhood of the tympanic membrane (presumably a rupture of the membrane itself). The mental phenomena of correct names, and other information furnished by the trumpet-voices, are tentatively referred to knowledge procured by the medium from 'Blue Book' or other outside sources.

Mr. Abbott concludes what is apparently a fair and impartial account with the words: "That I have not fully solved the problem does not prove that I could not have done so, had my opportunities been greater; or that others could not have done so". The reviewer inclines to agree, at any rate, with the first part of this statement. An abnormality of the Eustachian tube and an opening in the drumskin are matters that can be verified, if opportunity for verification is given; the analogy of the nasal whisper at once suggests itself. In the case of the 'mental phenomena,' the evidence of trickery can hardly be more than circumstantial: the result of sittings on the second day was markedly superior to that obtained on arrival, test-questions were often evaded, etc. It would, obviously, be a task of extreme difficulty to secure, at a first and single visit, conclusive proof of outside assistance; and it is a great deal to have discovered the mode of production of the voices. In an appended note on 'Unexplained Mystifications' Dr. Carus insists on this difficulty of detailed explanation, and points out that, in principle, the phenomena offer nothing new.

The second pamphlet describes some of the most striking performances of the professional 'magician' known as Joseffy. These are left unexplained, partly because Mr. Abbott cannot explain them, partly because he is bound to secrecy regarding them. The account is offered as "a lesson in credulity"; and the events described are, indeed, as uncannily impossible as one could wish.

P. E. WINTER.

The Philosophy of Kant Explained. By JOHN WATSON, M.A., LL.D. Glasgow: James Maclehose & Sons, 1908. Pp. vii., 515.

This volume is mainly devoted to the oral explanations that Prof. Watson was in the habit of giving on the successive paragraphs of his translations from Kant, the aim of these being to provide such a commentary on Kant's words as may at the same time furnish a fairly complete account of his philosophy. In addition, we have thirty-four pages of Supplementary Extracts from the *Critique of Judgment*, and an Historical Retrospect of the development from Descartes to Kant occupying thirty pages. All those engaged on the serious study of Kant either as teachers or taught must feel that it only remains to express their admiration and gratitude for this work. Prof. Watson has, with the slight exception of the Historical Retrospect, limited himself to exposition, but more lucid exposition or exposition better adjusted to its purpose it would be hard to find. This is a book that must be invaluable to so many that surely Prof. Watson may confidently look forward to receiving more than that measure of support he speaks of as necessary to encourage him to publish the promised sequel, which is to contain a discussion of Hegel's criticisms of Kant.

D. M.

The Psychology and Training of the Horse. By Count EUGENIO MARTINENGO CESARESCO. London: T. Fisher Unwin. Pp. xvi., 334. Price 10s. 6d. net.

This is a volume of practical advice on the training of horses, both for ordinary purposes and for the exhibition of circus feats. The "psychology" makes no profession of scientific accuracy, but is quite adequate for its purpose. The author is an acute observer of horse-nature, and the book abounds in wise reflections upon the memory, ideas, fears, likes and dislikes, character and moral qualities of the horse. The methods of training presented are of the most humane description, adapted with great delicacy to the individuality, experience and circumstances of the different types of horse.

There is much that is of value for Comparative Psychology in the chapter (pp. 63-191) on "How the horse learns and how he must be taught". The Italians are famed trainers of horses; we have here the best of their methods, and the principles on which they are based.

J. L. MCINTYRE.

La Notion de la Vérité dans le Philosophie Nouvelle. J. DE TONQUÉBEC. Paris: Beauchesne et Cie, 1908. Pp. 149.

This is an excellent study of the idea of truth in the philosophy of M. Bergson, and his followers M. Wilbois and M. Leroy. Its statement is clear and temperate, and it is made exceedingly serviceable by full citations and references.

The author writes from a scholastic standpoint, supporting the definition *Veritas est adæquatio rei et intellectus*, which M. Leroy has picked out for attack. He therefore occupies a position of dualistic realism, accepting, with the new philosophy, an "intuition" prior to the judgment, but sustaining, against it, a distinction of being from knowledge within the intuition itself. Hence he rejects the assumption of the self-containedness of cognition, which the new philosophy shares, as he and it agree, with current idealism; while he concurs in the polemic by which it deduces from that assumption, as accepted by idealism, the ruin of the ordinary idealistic cognition-theory. This argument is contained in a section on "The Definition of Truth," which is in substance a defence of the conception of knowledge as the direct seizure of an object, against the notion of self-containedness, and is at the present juncture perhaps the most important thing in the book. A critic might ask, granting the direct seizure of an object in every act of knowledge, is not the object as seized self-contradictory, and therefore in need of rectification according to some further principle?

The section just referred to forms part of the author's criticism, which is preceded by a plain and just exposition of the new doctrine. Here is brought into relief its incompatibility with what we commonly mean by truth. Yet here too are set out certain characteristics which the theory ascribes to thought which is true, which are attractive to idealists, who in this point will differ from the author. These are such as self-containedness, vitality, fecundity, coherence and non-contradiction, the admission of differences of degree. In view of these, an *exégèse bénigne* is tempting, but, as the author shows, impossible. Clearly, for the new philosophy, truths are the transitory expressions of what is in itself unstable. Nothing is in principle persistent; truth is what serves the turn, so long as it serves. Even our supreme principles are acquired habits, which might be unlearned, though to unlearn them would take

time. The Law of Contradiction, *e.g.*, is necessary to-day, but only because we have previously willed it.

The critical chapter, in a section entitled "The Intuition and the Concept," at once raises the issue of what there is in common between the intuition which is reality and the explicit idea which is truth. Can it seriously be said that the latter is not a necessary development of the former? To put it in other words, is the so-called intuition the unanalysed datum below the concept, or the organised concrete experience above it; or is it, perhaps, a confusion between the two?

The author, though hampered as some will think by his acceptance of the intuition as prior to and independent of the judgment, answers on the whole that the organised concrete experience is the true intuition, and for this, he urges, you cannot dispense with the concept. But "En réalité, la philosophie nouvelle n'aborde point ce problème de fond" (the problem of the fundamental identity between concept and intuition). In Philosophy, it affirms, one might attain to "living" the real, though one cannot "conceive" it. What does "living" the real involve, and how at such a level dispense with conceiving it? The expression, 'to "live" the real,' seems, one may observe, to come straight from the hearts of Plato and Aristotle. *θεωρία* for both was the very pulse of living.[1]

Yet the criticism seems to be weakened by the contention, involved in the realistic attitude, that "the real has in it more and other than the idea"—a contention which the author's excellent vindication of the predicate of activity for the idea[2] in the later section on the Evolution of Truth, might be held in some degree to modify.

In addition to the three sections already referred to, the critical chapter includes discussions on the conception of Free Truth and on the Criterion of Success. The former, the author points out, is disposed of if we make *any* view of truth dependent on *any* view of reality, which the new philosophy certainly does. Of the latter, it is enough to say that it demands analysis, and involves an inferential transition. We *infer from* the good *to* the true.

The author, it should be said, sets a high value on 'évidence'—self-evidence, the *fulgor veritatis*, in the establishment of truth. This is part of his hostility to Idealism; but it places him at a certain disadvantage in face of the philosophy he is attacking, which sometimes appropriates the language of idealistic logic with reference to system and self-coherence.

M. de Tonquébec has remarked that the radical defect of the new philosophy lies in its inadequate notion of an idea (p. 121). No doubt he is right. But might we not with equal justice begin at the other end, and say that it lies in the inadequate conception of "life"?

B. B.

Évolutionnisme et Platonisme : Mélanges d'Histoire de la Philosophie et d'Histoire des Sciences. Par RENÉ BERTHELOT. Paris: Félix Alcan, 1908. Pp. iv., 326. 5 fr.

M. Berthelot claims for his book that if it does not possess systematic unity, it at least exhibits throughout all the parts of which it is composed a community of tendency and aspiration. This is at once evolutionary

[1] And "life" in *Évolution Créatrice*, 214, 217, 323, seems *en revanche* to culminate in *θεωρία*. *Voir, pour voir*, is our highest life. Have we not here a different shade of thought from English Pragmatism?

[2] "L'idée n'est donc pas ce fragment inerte qui roulerait détaché dans le courant de la vie mentale. Elle-même fait partie du courant" (p. 122).

and rationalistic, and aims at preserving a balance between the doctrines of Darwin and Spencer on the one hand, and of Guyau, Nietzsche and Bergson on the other. The book is made up of certain Discussions reprinted from the *Bulletin de la Société Française de Philosophie* and articles from other publications. Although its various items have thus already appeared in one shape or another, one is very glad to have them collected into what is certainly an extremely interesting book. As it professes, its main value is historical, and that value is considerable. One is reminded in it, for example, how much more continuous and considerable the influence of Schelling has been than is usually believed, as we see it filtering down through Coleridge to Spencer, and through Guyau and Ravaisson to Bergson. Other points of historical interest discussed are the connexion between the views of Nietzsche and Bergson regarding the *rôles* of intelligence and intuition; the influence of Spencer on Nietzsche, and of Hegel on the Psychology of Bergson (p. 193) and on the Logic of Russell (p. 197). Altogether, in fulness of historical exposition, and in suggestiveness of historical detail and reference, lie the main merit of the book. The titles of some of the articles may be mentioned: "Le Darwinisme n'est pas l'evolutionnisme"; "Les origines de la philosophie de Spencer"; "Sur l'idée de vie chez Guyau, chez Nietzsche et chez Bergson," which aim at showing that the idea of evolution is not invincibly bound up with the system of Spencer or with a romantic vitalism like that of Bergson. The author's exposition of his own system of compromise is found in "Platonisme et Evolutionnisme". Like most compromises it strikes one as weak. To my mind the best of the remaining articles is the long paper, "Sur le sens de la philosophie de Hegel," which, apart from its own merits, had the additional one of having elicited the profound criticisms of Prof. Boutroux by which it is followed. In it M. Berthelot attempts to prove that Hegel endeavoured to subordinate Romanticism to an Idealism of Platonic inspiration, and maintains the startling theory that Hegelianism is not *Panlogism*. As against this I quite agree with Prof. Boutroux that Hegelianism may not be a Panlogism of *Gesetz* or *Verstand*, but that it is a Panlogism if we have regard to the character of the *Vernunft* which is its motive force. There can be no reasonable doubt that it is an absolute rationalism which eliminates individuality as valueless in itself, and that its much vaunted Liberty of the Spirit was nothing more than the metaphysically mechanical deduction of an edifice of concepts from antinomies posited by the abstract understanding.

D. M.

Die Stoa. PAUL BARTH. Zweite, durchgesehene und sehr erweiterte Auflage. (Frohmanns Klassiker der Philosophie xvi.) Stuttgart, 1908. Pp. 312.

Herr Barth's work, in its present enlarged form, provides an admirable summary of what is known about the history and doctrine of the Stoic school, with abundant references to the original authorities, as well as a very interesting account of the influence of Stoicism on later thought (Philo, Plotinus, the early Christian apologists, Clement, Origen, Augustine, the Florentine Academy, the seventeenth-century publicists and champions of "natural religion," the eighteenth-century philosophers). The writer is particularly careful to utilise all notices which throw light upon the internal developments of doctrine within the Stoa itself, and deserves particular commendation for the way in which he has realised the historical importance of Posidonius for the student of Roman

Stoicism. With his general presentation of the Stoic doctrine I find myself in pretty close agreement. I do not, however, understand why he should suppose *καταληπτικὴ φαντασία* to mean *greifbare Vorstellung*, and thus, in the end, make the Stoic doctrine of the criterium into an appeal to the supposed special objectivity of our experiences of touch. Surely *καταληπτικὴ φαντασία* simply means a presentation which "lays hold of" external reality, or if you like to press the juristic metaphor which lies at the bottom of a good many of the derived meanings of *καταλαμβάνω*, "convicts" the reality of being present. That the adjective was understood in an active sense seems to me to be shown by the sceptical counter-watchword, *οὐ καταλαμβάνω*. The chief defect noticeable in the book is that the author appears to be imperfectly versed in the Greek philosophy of the fourth century, and in consequence is apt to misconceive the relation of Stoicism to Plato and Aristotle and their predecessors. Thus the physical tenets ascribed on p. 39 to Zeno, apparently as original, really go back to Xenophanes, and perhaps to Anaximander. It is at least very questionable (p. 40) whether Plato ought to be classed with Aristotle as a believer in the "eternity of the world". The "allegorical" interpretations of the Greek myths surely may be traced beyond Antisthenes to Prodicus and to the Homeric allegorists (p. 49). The remark (p. 65) that the Stoics laid more stress on God's omnipotence than Aristotle would be quite misleading in its suggestions to a reader who did not know that Aristotle expressly denies all "production" to God. Cleanthes can hardly have been thinking of Epicurus when he cursed him who *first* severed justice from utility (p. 135). Thrasymachus and Callicles in Plato had made the separation long before, and so, for the matter of that, had the author of the "Delian inscription" denounced by Aristotle. It is a more serious error when the Stoics are treated of as though they had been the first school to give more than a grudging recognition to the conative aspect of mental life (pp. 158-61). Plato, who is treated by our author, in accord with an absurd prejudice, as a mere "intellectualist," was as well aware as any philosopher who has ever lived of the presence of an irrational element in the soul, and knew quite well that it is to habituation and not to instruction that we have to resort in the early stages of moral education. It is amazing that any one who has ever read the *Republic* should assert that "the beginning of virtue" according to Plato is a "purely intellectual attitude," or regard as a Stoic discovery the doctrine that "teaching alone cannot overcome the resistance of the will" to the moral law, or think that Plato proposed to inspire his "guardians" with courage by mere appeals to *Vorstellungen* apart from physical discipline. What is still odder is that Herr Barth, who repeatedly calls will the "irrational" and "blind" element in human nature, should single out for special commendation the one prominent school of Greek philosophers who flatly refused to recognise the presence of an "irrational part" in the soul. Nor do I understand how the author has been led to the remarkable conclusion (p. 33) that "Plato found happiness primarily in knowledge, Aristotle in knowledge as well as in action". I would also ask on what he bases his statement that "*Plato and* Aristotle believed that many peoples are destined by nature for slavery" (p. 191). In one passage, at least, Plato expressly rejects the division of mankind into Hellenes and "barbarians" (as we might say into "white men" and "inferior races") as arbitrary, and it is significant that the industrial life in his *Republic* is assigned entirely to free citizens. On the other hand Plato hardly deserves the credit bestowed on him at p. 193 for the maxim that we punish with a view to the future and not to the past. It is not Plato but Plato's Protagoras who makes the assertion, which is presumably put into his mouth because the real Protagoras actually held

something of the kind. Plato's own views on punishment, as we can gather them from various dialogues, are scarcely so simple.

I think Herr Barth also goes too far in the latter part of his work in detecting direct Stoic influence wherever an author's language resembles that of the school. The fact that Euclid called his axioms *κοιναὶ ἔννοιαι* seems hardly sufficient ground for saying that "the famous Euclid was a Stoic" (p. 206). Of itself it only proves that the expression *κοιναὶ ἔννοιαι* had passed into current usage, exactly as many of the terms used by Locke or Hume have become commonly current in English. So, too, it is unnecessary to trace back to the Stoa the belief of the early Christian apologists and theologians in Providence. The Scriptures alone, to say nothing of Platonism, would equally well supply them with grounds for their conviction. (By the way, what can be the meaning of the curious statement, which occurs in the account of Origen, at p. 262, that Plato's God was *räumlich begrenzt?*) Still, when allowance has been made for all these deficiencies, Herr Barth's volume remains a valuable addition to the excellent series in which it appears.

A. E. Taylor.

Gesammelte Werke von A. Spir, Band I. Denken und Wirklichkeit, Versuch einer Erneuerung der kritischen Philosophie. Vierte Auflage, mit Titelbild nebst einer Skizze über des Autors Leben und Lehre, von Helene Claparède-Spir. Leipzig: Verlag von Johann Ambrosius Barth, 1908. Pp. xxx., 548.

The present reissue of Spir's *Thought and Reality* constitutes the first volume of a generously planned edition of his works. There is a portrait, and the book is prefaced by an adequate, though very brief, sketch of his life and doctrine from the hand of his daughter. The note struck in Spir's life is that of isolation. Whether as the lad in a Russian naval school reading Kant—Spir fought at Sebastopol—or as the student *Hospitant* in German universities, or in later years curbed by 'the bridle of Theages' in Lausanne and Geneva, African Spir was in each of the countries, actual or ideal, of his allegiance an alien of the spirit. Hence the neglect of him in his own generation. In ours it is the uniqueness of the outlook safeguarded by this aloofness that seems likely to lead to Spir coming by his own.

Spir's system was evolved so early as the opening seventies, and there are marks of date in the present book. Nowadays, for instance, the emphasis in the discussion of such topics as scientific atomism and the Darwinian theory would fall quite otherwise. The drybones of Mill's logic—on the judgment, *e.g.*—would bulk less large, and what was left of them would find different treatment. A psychology of the will basing itself upon Mill's Examination of Hamilton would perhaps fail to be regarded as altogether adequate to-day. But, even in fundamentals, the bringing of Kant as read in the light of Herbart to bear upon the empiricism of Mill and Lewes and Spencer is only intelligible at a given date. English students may well be grateful to Spir for the deep-probing criticisms of Mill which betray such complete knowledge of all that Mill wrote, but they do mark limitations of time and circumstance.

Yet Spir's central philosophical theory is not to be lightly dismissed as the manifest result of the reading of just these books in chance conjunction with the reading of just those. Without Herbart and without Mill Spir's philosophy would not be what it is. But his outlook is not a mere blending of these two influences. He is no realist and pluralist with the one, no empiricist with the other. His point of view is one that

few will take perhaps, but it is at least altogether his own. Spir not only saw no other man's rainbow, he could not even think it.

Spir's philosophy is more difficult in summary than in detail. Distinguishing thought wholly from the objects of thought, and emphasising its difference from sense as one of kind, we get a cleavage between the given of experience and the *a priori*. On the one hand is the changing phantasmagoria of sense. On the other the principle of identity and the law of contradiction. It is in the dissidence of the two—in the failure of experience to satisfy the demand for a self-subsistent and self-identical absolute, in the inability of the unconditioned to find expression in the sphere of change—that the philosophic problem and the clue to its solution emerge. The absolute is not the ground of explanation of the given, not its sum, nor that from which it may be deduced. It is the norm from which the given diverges. The rift between the two, the *abnormity* of experience, is the fact in the light of which the meaning of the illusory external world is to be grasped. Things and selves are complexes of sense-impressions. Things and selves we regard and cannot but regard as substances, *i.e.*, as self-subsistent and unchanging identities. Hence the contradiction of that contrivance of nature's artistry which we call the outer world. This is unreal, but it is the natural and necessary illusion which the whole fabric of science presupposes, and which science within the limits of its own purposes is right in presupposing. Philosophy, however, in bringing us to recognise the world of persons and things as organised illusion forces us back upon the norm which is unchanging.

The conception of the self-identical or absolute unsatisfied by experience which fails to conform to the norm but yet can only be manipulated on the assumption of the norm, as the rational background to induction, belongs to a level of speculation where the atmosphere is something rarefied. The formula of a *Natur-einrichtung* to explain the illusion of externality is obscure. Spir is more intelligible to the plain man when he is criticising a definite view of one of his predecessors, *e.g.*, Kant's treatment of time and space as in all respects on a par; developing a definite species of the norm or corollary from it—when for example having insisted that the self-identical or unconditioned can have nothing to do with change, he infers to the law of universal causation in the form that all change is conditioned, and by something itself conditioned, indeed by previous change; or applying results of his theory, as, for instance, in explanation of our knowledge of other selves, or in deprecation of individualism. The book abounds in subtlety and suggestiveness of this kind for those of us who reject our author's supreme paradox.

HERBERT W. BLUNT.

Geschichte der Autobiographie. Erster Band: *Das Altertum.* Von GEORG MISCH. Leipzig and Berlin: B. G. Teubner, 1907. Pp. vii., 472. M. 8.

This work was elicited by the theme of the *History of Autobiography* proposed by the Prussian Academy of Sciences in 1900. The author is to bring the subject down to modern times with another two volumes. In the present volume, after briefly noticing the schematic and external forms of autobiography found in Babylonian and Egyptian inscriptions, Herr Misch marks the real beginning of this genre of composition with the real discovery of individuality made by Greece, and considers it, from its first utterance in Hesiod, through its expression in political, rhetorical and romantic writings, until inner experience reaches in Marcus Aurelius

a new form of expression, the most adequate of which the old culture was capable, and the new wine of Christianity broke through the classical restrictions and gave us the mysticism and lyricism of Gregory of Nazianzus, and led Augustine, out of his view of the world and his experience of conversion, to create a great and original autobiographical form. He considers the plastic fancy and logical method of classical autobiography, the desire to present the constant nature in fully developed man, "that which was first by Nature," as inadequate to represent the infinite process and uniqueness of individuality. The work deserves to be noticed, not only for its value as a *Sammelwerk* but also for its own merits. It has called for scholarship, patient research and clear guiding ideas, and Herr Misch has these.

D. M.

Giordano Bruno, Opere Italiane: I. *Dialoghi Metafisici*. Edited by GIOVANNI GENTILE, 1907. Pp. xxii., 420. L. 6.00.
II. *Dialoghi Morali*. Edited by the same. (Classici della Filosofia Moderna.) Bari: Laterza e Figli, 1908. Pp. xx., 512. L. 7.00.
2. *Giordano Bruno nella Storia della Cultura*. G. GENTILE. Milano, etc.: Remo Sandron, 1907. Pp. 48.
3. *La Filosofia di Giordano Bruno*. ERMINIO TROILO. Torino: Fratelli Bocca, 1907. Pp. 162. L. 3.

Bruno has been for many years recognised as the greatest and most original philosopher Italy has produced: it is curious that no edition that might be called popular, even of his Italian works, has hitherto been published. The originals were so rare that, so late as the beginning of the nineteenth century, scholars and historians passed them from hand to hand. Wagner's edition, containing all the Italian works, was published in 1830; useful as it was, it contained many errors; yet, as Gentile tells us, it was already out of print in 1834. Not till 1889 was a further complete edition of the Italian works printed, that of the Orientalist Lagarde, who aimed at an accurate reproduction not merely of the words but also of the peculiar and varied orthography, punctuation and grammar of Bruno. Gentile points out that this fidelity is merely a hindrance to the modern student, whose interest is in Bruno's philosophy, not in his spelling. He has accordingly printed Bruno in modern form, while retaining all that is characteristic of his style.

As the titles show, the volumes contain the philosophical works only; the *Candelaio* is therefore omitted. The paging of the three previous editions,—the original, that of Wagner, and that of Lagarde,—is given at the foot of each page of Gentile, so that all divergencies may be traced, and all corrections judged on their merits. There are no changes of any significance from Lagarde, except in typography. The second volume presents (pp. xvi to xix) an earlier and briefer offprint of the first five pages of the *Cena*, discovered in an edition that is now in the Bibliotheca Nazionale of Naples. It contains nothing that is omitted, and omits nothing of importance that is contained in the later copy, unless some of the witticisms of Frulla, and the amorous invocation to the graces of England be so considered. Frulla, however, was in the original draft described as a servant of "Smith," the interlocutor whose identity has worried the commentators. The present reviewer has suggested he might be the poet William Smith, one of Spenser's circle; but it appears (Gentile, i., p. 415) he was an unromantic John Smith, who had engaged the philosopher to teach him Italian, the then fashionable language of the English court.

Gentile's notes are brief, and confined to the necessary interpretation of the many historical and philological references in Bruno. Much valuable light is thrown on the sources of Bruno's inspiration in the Ethical Dialogues. There are additional notes at the end of each volume, and a useful index in the second. In all respects this edition seems to meet the need for a convenient and readable reprint of the ardent pioneer apostle of modern philosophy.

2. What were the real causes that led to the condemnation and death of Bruno? This is the question discussed by Gentile in the small volume on "Bruno in the History of Civilisation". The answer is sought (1) in the ideas of Bruno upon the relation between Philosophy and Religion, (2) in his attitude towards the Reformation and towards the Inquisition. It is shown that throughout his life, and up to the very eve of his execution, Bruno held firmly to the distinction between Religion as the sphere of revelation and Philosophy as that of rational Knowledge; the instrument of the one being *faith*; of the other, *experience* and *reason*; the end or aim of the former was practical,—happiness or the blessed life; that of the latter theoretical,—the discovery of truth. It was impossible for the two to conflict, since they differed alike in their sources, in their methods and in their goals. Bruno was willing to accept the theology of the Church, provided he was granted absolute liberty in his philosophy. That however was a progressive step which Bellarmino and his fellow Inquisitors were by no means prepared to make. They required that Bruno should not merely repent his errors of faith and practice (which he willingly did) but should also recant and reject the new philosophical and scientific truths which he claimed to teach. Bruno refused; he died therefore a martyr not for any religious dogma or practice but for the freedom of thought and of scientific research. It is the justification on Bruno's behalf of this title that Gentile eloquently submits in the volume before us, and he rightly protests against such exploitation of Bruno's name by political parties, of whatever colour, as has frequently occurred in Italy. Bruno was essentially a mystic (pp. 11-19); his interests lay entirely outside of the practical, social life of the Church. The reforming Churches, whether Calvinist, Lutheran, or Anglican, found him equally cool,—ready to conform to their external ceremonies, in return for liberty to write and teach his own philosophy. It was in the vain pursuit of this liberty that he travelled from country to country, from city to city of Europe. No doubt there was a large element of intellectual pride in his contempt alike for the plebeians and for the dogmas which seemed to him required only as a bridle upon their vulgar passions. No doubt also the distinction between faith and reason, between revealed and empirical truth could not be final, but in the circumstances of the time, under the persecuting spirit that animated Reformers and Orthodox alike, it was the one hope of Scientific thought; and Bruno contributed both by his writings and by his death to the realisation for others of the liberty he sought in vain for himself. On the other hand, Bruno was far removed from the Atheist or Secularist which some travesties of his teaching depict; he found God not merely in the externals of ceremony and of historical revelation, but in all that is, the world about us and the world within us, in the truths of science, in the ideals of art and of conduct; the ultimate source and aim of all moral aspiration and all social evolution.

3. The author of the work on "the Philosophy of Bruno" has already written several volumes on the Theory of Knowledge and other subjects; his style is somewhat grandiose, his periods involved, his thought vague and "insaisissable". The principal aim of his book appears to be to prove that Bruno was "antimetaphysical" in his philosophical tendency, that however frequent the term may be in his works, the "substance, the

soul of metaphysics, as well as that of theology, is absent". To most readers of Bruno this will seem absurd, except in a very peculiar interpretation of the term "Metaphysics"; it will be seen above that Gentile calls the first three of the Italian works the "Metaphysical Dialogues," and most will regard the name as appropriate. Troilo however finds in all definitions of Metaphysics the cloven hoof of Dualism—"double aspects of enigmas, double orders of problems, double forms, and double laws, the natural and supernatural, contingent and transcendent, human and divine". Bruno was certainly no dualist in his main conception of Nature and of God, but he would have been the first to regard his idea of the immanence of the Absolute in the Appearance, of God in Nature, as a metaphysical doctrine. Troilo would reduce all philosophy apparently to the Theory of Knowledge on the one hand and the Philosophy of Nature on the other: Bruno's contribution being mainly towards the latter, in his great principle of the living and infinite unity of all things, at once the source and the end of the evolution of Nature and man. The discussion is mainly about a word, but Troilo gives in general an accurate and vivid presentation of Bruno's system.

J. L. McIntyre.

La Filosofia dell' Azione. Da Giovanni Cesca. (Biblioteca 'Sandron' di Scienze e Lettere.) Milan, Palermo and Naples (no date). Pp. 328.

By action Prof. Cesca means the intentional alteration of reality; and by its philosophy he means a study of the conditions that make human action possible and efficacious (p. 296). Furthermore it must be directed towards the improvement of what is; which, again, he explains to be the tendency to make individual and social life more human and more moral (p. 93). Altruism and civilisation are frequently impressed on us as ends to be kept in view; and constant subordination to social duty, expressed under the form of the moral law, is also recommended. But, what seems a grave deficiency in so ambitious a work, morality is throughout rather assumed than proved. From the philosophical affinities of the writer one might expect to find him the adherent of Universalistic Hedonism; but it would appear that he had never heard of such a doctrine. According to him the great error of the utilitarians and Hedonists was their refusal to see anything in man but the mere instinct of self-preservation, whence they regarded him as simply egoistic—a rather belated view after all that Schopenhauer, Mill, Spencer, and Sidgwick have written on the subject. In this connexion it may be noticed that Prof. Cesca treats the instinct of propagation as the original source of altruism; which, so far as the males of our species are concerned, is doing it far too much honour.

In default of a more precise definition we have to content ourselves with the information that 'the principal end of man's activity is to rule over Nature and direct her forces to his advantage (favore)'. But this seems a confusion of means with ends. For it is not mentioned in what man's advantage consists. An Aristotle would have valued every extension of our control over the forces of Nature only in so far as it made the theoretic life easier and more lasting than before. A Nietzsche would have valued it merely as a new instrument of despotism in the hands of superhuman genius. Neither of these ideals has the approval of our author. 'The whole importance and value of knowledge,' he tells us, 'is derived from its having a practical end in view' (p. 315); while by a remarkable inconsistency he admits on the next page that 'the great conquests of Science are due to the disinterested desire for know-

ledge'. And the last words of his book speak of the control over Nature as an indispensable condition for the promotion of happiness—without any more precise specification of what happiness means.

A more appropriate title for the present volume would perhaps have been *True and False Idealisms*. True idealisms, according to Prof. Cesca, are those which, remaining faithful to reality, supply human action with the highest aims. They assume three forms: Art, Religion, and Philosophy. Except where it counts as a moral influence, Art would seem to be more properly co-ordinated with practice, as Aristotle taught, than included as one of its divisions. Nor is it good method to give Religion the place it occupies here, when all reality is denied to the divine objects with which it has hitherto been associated. Our author identifies religious emotion with the purest and most exalted form of love, but shows no reason for treating it as anything more than a department of ethical culture. The ideal of Philosophy has been already indicated. It consists in so organising the whole of experience as to promote the development of humanity.

The chapters on False Idealism include more than a third of the work, forming its most interesting and valuable portion. Prof. Cesca passes in review and severely criticises the various metaphysical and neo-theological theories which, in his opinion, are calculated to weaken our hold on reality and thus to undermine the foundations of practice. From this point of view the subjective idealism which limits man to the knowledge of his own states of consciousness, and the so-called Rationalism which professes to explain the nature of things in themselves are equally condemned as misleading illusions. As against these our author holds to the old philosophy that knowledge is limited to phenomena, with the single exception that phenomena are known to be the manifestation of things in themselves. But like many other agnostics he is not consistent with himself. For, to begin with, things in themselves are causes, and as such fall into a category of objects about which something is known. 'Causes are antecedents' (p. 195), and therefore must exist in time. Furthermore 'it is unintelligible that the factors of the phenomenon should be of a nature essentially opposed to their sensible manifestations' (p. 196). Better still, 'sensible qualities are an index of the intimate structure of things' (pp. 193-94). Phenomena are 'the products of an objective and a subjective factor' (p. 174); but there is good reason for thinking that these two (elsewhere described as nature and spirit) are not an antithetical couple, if indeed they are not closely akin (p. 241). Such concessions bring us in sight of a monistic philosophy.

Prof. Cesca is more sure of his ground when engaged in the congenial task of dissecting the various methods of irrationalism, so sedulously worked by theological apologists from Newman to our own day, for the rehabilitation of traditional beliefs. The handling of Pragmatism alone is somewhat less thorough than could be wished.

Our author exhibits so many points of contact with Comte's philosophy that one wonders why he does not frankly describe himself as a Positivist. As it happens he prefers the name of Humanism for his system, claiming to have introduced that term so long ago as 1894, and charging Prof. Troiano with having appropriated it as the title of a work published in 1907, which is described as embodying without acknowledgment nearly the whole of his teaching (p. 294). I have not read Troiano's book; but it seems perfectly possible that his ideas were borrowed directly from Comte, whose Religion of Humanity may well have suggested a name so closely akin to it both in sound and sense.

A. W. Benn.

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Giovanni Vidari, *L'Individualismo nelle Dottrine Morali del Secolo*, xix., Milano, Hoepli, 1909, pp. xx, 400.

VIII.—PHILOSOPHICAL PERIODICALS.

PHILOSOPHICAL REVIEW. Vol. xvii., No. 5. **J. Seth.** 'The Alleged Fallacies in Mill's "Utilitarianism".' [Acquits Mill of the charge of various logical fallacies: as of composition, in his proof of the principle of utility; of figure of speech, in his use of the term 'desirable'; of irrelevancy, in his treatment of motives; of contradiction, in his acceptance of psychological hedonism; of confusion, in his doctrine of the qualitative distinction between pleasures. As regards the two last points, "Mill was not concerned . . . with the deeper ethical question which we cannot help raising. His entire argument is dominated by the practical purpose which inspires the essay."] **W. Fite.** 'The Agent and the Observer.' [The observer's view is mechanical, visually descriptive; the observer's is logical and teleological, anthropomorphic and automorphic, couched in terms predominantly of organic and muscular contents. The author shows the importance and the consequences of the distinction within descriptive psychology, and indicates the partiality, inadequacy and abstractness of each view taken alone. In particular, the observer's view involves both exclusion and distortion; witness the conceptions of humanity offered by the social sciences.] **E. H. Hollands.** 'Neo-Realism and Idealism.' [The epistemology of neo-realism rejects the representative theory of knowledge: it thus parts company with the older realism, and finds itself in agreement with objective idealism. But it holds, also, that knowledge makes no difference to the facts which are known: here it conflicts with objective idealism. Negatively, however, its criticism is aimed almost exclusively at subjectivism; positively, it is committed to a procedure which starts with reals and tries to arrive at relations of reals. In other words, it has not met objective idealism in the field of controversy, and its constructive effort lags behind that of objective idealism as a statement, not a solution, of the metaphysical problem.] **W. K. Wright.** 'Happiness as an Ethical Postulate.' [There is a peculiar mental experience which attends moral action, partly cognitive and partly affective. "In its affective aspect, it is pleasurable because self-consciousness is unimpeded in its contemplation of the moral worth of its action. It is cognitive because the ends striven for are . . . cognised. The experience . . . represents the highest satisfaction that a moral man can experience,—it is happiness." In this sense happiness, as an ethical postulate, becomes morally significant and finds psychological support.] Reviews of Books. Notices of New Books. Summaries of Articles. Notes.

PSYCHOLOGICAL REVIEW. Vol. xv., No. 3. **H. Carr.** 'Voluntary Control of the Distance Location of the Visual Field.' [Among 350 students the writer has discovered five new cases of voluntary control of the visual field; he gives notes upon these, supplementary to the account in vol. xiii., no. 4. The effective criterion of depth for the new type may be termed a 'central factor,' since it is susceptible to

volition, and implies no detectable sensory adjustments; it may be considered as consisting of motor impulses normally involving or accompanying adjustments to distance. The illusion is not confined to moments of monocular vision.] 'On Meaning: a Symposium before the Western Philosophical Association, December, 1907.' **W. B. Pillsbury.** 'I. Meaning and Image.' [Ordinarily, image is taken to be the primary process, and meaning is either derived from it or made a second ultimate. Really, meaning is the primary process in concrete consciousness, and image is but a certain kind of meaning. Meaning is a co-ordination, an interrelation between sensation, idea and earlier experience, controlled or represented by the purpose of the moment; it implies a sensory content associated with a vast number of other sensory and motor elements, dominated by still other and more remote nervous processes. Image is the psychologist's construction, set up to explain mental operations.] **S. Colvin.** 'II. The Nature of the Mental Image.' [We cannot usefully distinguish the image epistemologically, in terms of reality, or physiologically, in terms of the seat of the aroused processes. Introspection also breaks down, since some psychologists make image and sensation fundamentally the same, while others find a qualitative difference. Imagination is best defined as that activity of consciousness in which an object of sensation is experienced as not immediately present to the senses. The reaction to perception is prompt and definite, while the reaction to image, though it must be made, may be postponed.] **T. L. Bolton.** 'III. Meaning as Adjustment.' [It is the attitude of the experiencing subject that gives meaning to the object; perception arises through a reaction that is characteristic of the object perceived. The meaning is, however, never complete or exhausted, since it is contained only partly in the adjustment that has taken place, and partly in other reactions that are about to take place. This incompleteness is a general character of consciousness.] **J. E. Boodin.** 'IV. Truth and Meaning.' [Meaning in its essential aspect is intent; imagery is means or by-play. Truth is one species of meaning. Its criterion is not usefulness, or even (without qualification) satisfaction; for this is only a coefficient of the terminating of an idea in a certain reality which it intends or suspects. The test of truth is the agreement of idea or belief with its reality: formal, as of idea with idea in formal reasoning; or material, as of idea with facts of a perceptual and individual kind in concrete truth. Truth must agree with the future; individual and social selection are subject to cosmical selection.] **J. M. Baldwin.** 'Knowledge and Imagination.' [Discusses the difference between the semblant or imaginative and the actual or truthful meaning, and the parts that they play in the upward movement of knowledge. Every cognitive content must have both renderings; belief motives make-believe and make-believe engenders belief. The instrumental meaning is a personal and imaginative re-reading of an actual or truthful meaning, and the truthful meaning is a common and actual re-reading of an imaginative personal construction. What, then, is the end of imagination? It may be theoretical, the true, or practical, the good; or it may be æsthetic or intrinsic, the real *par excellence*. As the self-reality of inner and the thing-reality of outer control get apart in the development of experience as cognitive, so do they come together in the æsthetic mode. This æsthetic mode of realising has the only meaning that can be called in any intelligible sense absolute.] Discussion. **F. C. French.** 'Group Self-Consciousness: a Stage in the Evolution of Mind.' [Between the objective consciousness of the animals and the individual self-consciousness of man stands, genetically, the group self-consciousness of the tribe or community.]

AMERICAN JOURNAL OF PSYCHOLOGY. Vol. xix., No. 3. **E. Murray.** 'A Qualitative Analysis of Tickling: Its Relation to Cutaneous and Organic Sensation.' [The first part of the paper reports a careful introspective analysis of the pressure quality, and concludes that Goldscheider's granular pressure is a complex: the elementary tactual quality is 'contact-brightness,' and the dull substrate of the Goldscheider pressure is a secondary and probably a non-cutaneous factor. The second part is devoted to a similar analysis of tickling, and concludes that tickling is "an intensely vivid complex of unsteady, ill-localised and ill-analysed sensation, with attention distributed over the immediate sensory contents, and the concomitant sensations reflexly evoked". The sensory basis of the experience is contact-brightness; but in actual experience tickling differs from the ordinary contact-complex as 'feeling' from perception. A 'feeling' (as here defined) is a coherent and persistent mass of sensory elements, unanalysed and but roughly localised, which has an intrinsic claim on the attention and is distinguished by peculiar vividness and strong dynamogenic value; the tickle-experience, in particular, is a form of the 'feeling' of excitement.] **F. L. Wells.** 'A Neglected Measure of Fatigue.' [Discusses the use of the tapping-test (maximal rate of repeated voluntary movements), in the light of the requirements of a reliable measure of fatigue, and in comparison with Kraepelin's addition-test, ergographic tests of force of movement, etc.] **J. Bascom.** 'Laurens Perseus Hickok.' [General review and appreciation of Hickok's work in psychology and philosophy.] **E. L. Thorndike.** 'The Effect of Practice in the Case of a Purely Intellectual Function.' [Report of experiments on the mental multiplication of one three-place number by another. The rapid and marked improvement by practice throws additional doubt on the general influence of any form of specific practice. Individual difference in the changes of rate of improvement is, probably, due not only to the operation of one identical law modified by difference in conditions, but also to the action of radically different laws, operating on different individuals according to the different physiological changes in them which underlie improvement. Greater original capacity apparently gains as much as (or more than) lesser capacity from the same environmental training; and capacity to improve more quickly to a small degree probably means capacity to improve to a higher degree under the maximum of efficient training.] **W. H. Burnham.** 'The Problem of Fatigue.' [Review of recent work upon fatigue, and formulation of outstanding problems: *e.g.*, the central or peripheral character of fatigue from neuro-muscular activity; the relative resistance of nerve-centre and periphery; the range of individual variability in power of work, resistance to fatigue, etc.; the discovery of a practical test of the psycho-physical condition of the individual, available for teacher and physician.] Psychological Literature. Book Notes.

INTERNATIONAL JOURNAL OF ETHICS. Vol. xix., No. 1. October, 1908. **A. W. Benn.** 'The Morals of an Immoralist—Friedrich Nietzsche.' [An interesting account of the development and relations of Nietzsche's ethics. The subject is here treated up to the emergence of the doctrine of the superman, and is to be concluded in a second paper. The genesis of the idea of the superman is connected with the influence on Nietzsche of Spencer's doctrine of evolution.] **T. Davidson.** 'Savonarola.' [He attempted the impossible task of reconciling political freedom with negation of the moral autonomy of man. His work failed because he sought the principles, whereby to guide society to salvation, in an external authority, instead of in the divine spirit of man himself.] **F. Melian Stawell.** 'The Modern Conception of Justice.' [It is charac-

terised, first, by a growing distrust of punishment of the individual as the only remedial force; secondly, by the recognition of the worth of suffering that is not punitive but unmerited, and of reward that is not individual only, but constitutes a common good.] **J. B. Baillie.** 'The Dramatic and Ethical Elements of Experience.' [Finds the essential character of a dramatic situation in the invasion of the moral life and purposes of an individual by factors that are non-moral, but which are inseparable from morality itself and form its co-element in human experience. The distinction between its two forms, tragedy and comedy, depends on the permanency or temporariness of the conflict, *i.e.*, on whether the reconciliation remains a demand or is actually brought about by the course of events.] **C. W. Super.** 'Ethics and Law.' [Directed against the statement that in the progressive alteration of laws the appeal is from law to ethical principles. Contends that, while ethics deals with personal virtue and motive, legislation is concerned with the promotion of justice without taking account of these, or even with affairs which have nothing to do with justice and are only matters of expediency. Ethical progress and legislation do not keep pace with each other.] **W. M. Salter.** 'A New Type of Naturalism—Montgomery.' ["Parts company equally with materialism and with current idealism. The peculiarity and originality of his way of thinking lies in his use and interpretation of biological facts." All motion, being reaction, is in a sense *creation*—the realisation of inherent potencies. "All we call material is idealistic in nature, *i.e.*, is conscious experience, actual or imagined." But conscious experience is not self contained or self-explicable; it implies "an extra-conscious reality, both without and within man". Montgomery's work is not receiving the attention it deserves.] Book Reviews.

JOURNAL OF PHILOSOPHY, PSYCHOLOGY AND SCIENTIFIC METHODS. v., 8. **C. H. Johnston.** 'Ribot's Theory of the Passions.' [Almost wholly an analysis.] **S. Smith.** 'The Threshold of Rectified Perception as a Clinical Test.' [Statistics, with a new figure illusion.] **W. P. Montague.** 'Consciousness and Relativity.' [A reply to B. H. Bode's criticism in v., 6, of a paper in iv., 14. It does not, however, attempt to meet the objection that 'panobjectivism' resolves itself into Berkeleyanism.] **R. S. Woodworth.** Report on a meeting of the New York Academy of Sciences. v., 9. **J. E. Boodin.** 'Consciousness and Reality: II. Consciousness and its Implications.' [Consciousness makes only one difference to reality, that of awareness.] **R. W. Sellars.** 'Consciousness and Conservation.' [Attempts to 'mediate' between materialism and panpsychism.] **L. P. Boggs.** 'The Question in the Learning Process.' [The general theory of teaching is "find out what the child wants to know, and help him to learn it".] v., 10. **G. A. Coe.** 'Religious Value.' ["Ethical value and religious value are of the same kind, but one climbs only part way up the ladder which the other essays to mount to the very top."] **C. A. Strong.** 'Pragmatism and its Definition of Truth.' [Accepts it as an account of 'objective reference' and of 'why we think things true,' but not as 'a theory of what truth means'. For, as historical illustrations show, "truth consists rather in the potentiality of the consequences than in their actual occurrence".] **A. H. Pierce.** 'The Subconscious Again.' [Reply to Prince in v., 3.] v., 11. **T. L. Bolton.** 'A Genetic Study of Make-Believe.' [A pragmatic account of children's games, etc., pointing out their value in making reality more palatable.] **A. Schinz.** 'Jules de Gaultier's Theory of the Scientific Principles of Ethics.' **H. M. Kallen.** 'The Pragmatic Notion of ὕλη.' [Reply to A. R. Gifford in v., 4, who has (1) confused indeter-

minate and indeterminable. (2) assumes that A to become B must already be B 'unrealised,' and (3) construes 'system' in a non-pragmatic way.] v., 12. **G. Vailati.** 'On Material Representations of Deductive Processes.' [Discussion of metaphors on the lines of Lady Welby's 'significs'.] **W. Mitchell.** 'Structure and Growth of the Mind.' [Discussion of the review in v., 2.] **M. Meyer.** 'The Exact Number of Pragmatisms.' [Criticism of Lovejoy's articles in v., 1, 2. Lovejoy's distinctions are all unimportant, except that between 'meaning' and 'truth,' which is untenable. There are as many pragmatisms as there are pragmatists, but "neither science nor pragmatism is any worse off on that account".] v., 13. **W. H. Winch.** 'The Function of Images.' [An amusingly and brightly written paper, backed by experiments, in support of Woodworth's and Thorndike's view of the unimportance and frequent non-existence of images. It is suggested that much that is ordinarily classified as imagery is really sensational in character, and has been so treated because metaphysical prepossessions have led to the denial of sensational character to all processes which are not cognitive of an external world.] **H. H. Britan.** 'The Power of Music.' [It stimulates the emotions.] v., 14. **J. E. Boodin.** 'Energy and Reality: I. Is Experience Self-Supporting?' [The old realism and absolute idealism both fail to meet the problems of our finite world of change, and the static view of being must give way to a dynamic. "Being = energy."] **J. Dewey.** 'The Logical Character of Ideas.' [A reply to Pratt, v., 5. 'Truth' can't be identified with 'known fact,' because it belongs to judgments and when the fact is ascertained the judging is over.]

THE SOCIOLOGICAL REVIEW. Vol. i., No 2, April, 1908. **Principal Jevons.** 'The Definition of Magic.' [Magic not a later or derived form of some previous conception, but dates from the earliest times when man put the question, in fear or astonishment, "Who did it?" The answer, "Some man working at a distance and in mystery," may carry with it magic, or if it be "Apollo," religion.] **Dr. W. Leslie Mackenzie.** 'The Family and the City: Their Functional Relations.' [The city the body of which the family instinct is the soul. The great problem to bridge the gap between the individual as the abstract individual and himself again, the organised city.] **Rev. A. J. Carlyle.** 'Lord Acton on the History of Freedom.' **Dr. J. W. Slaughter.** 'Psychological Factors in Social Transmission.' [Problem of relation between organic and historical heritage. Transmission not fully describable in intellectualistic terms. The feelings are organically and not socially transmissible; social transmission involves in each individual a complete new series of adjustments.] **John M. Robertson, M.P.** 'The Tutelage of Races.' Discussions: **G. Lowes Dickinson.** 'Sociology and Ethics.' **T. R. Bridgewater.** 'The "Child Criminal".' Notes on the Congress of the History of Religions. Reviews, etc. Vol. i., No. 3, July, 1908. **Sir C. L. Tupper.** 'Sociology and Comparative Politics.' [Necessity of treating Comparative Politics in a purely scientific spirit.] **W. Trotter.** 'Herd Instinct and its Bearing on the Psychology of Civilised Man.' [Conscience and the feelings of guilt and duty, the peculiar possessions of the gregarious animal.] **S. M. Iqbal.** 'Political Thought in Islam.' **Prof. L. T. Hobhouse.** 'The Law of the Three Stages.' [Critical examination of Comte's Law. It does express certain aspects of the movement of thought, but requires considerable modifications. We might talk of the stage of imagination, of dialectic, and the positive stage. Men begin the search for truth, one might say, with fancy; after that they argue, and at length they try to find it out.] **S. H. Swinny.** 'A Sociological View of the History of Ireland.' Discussions: Old Age Pensions. Reviews,

etc. Vol. i., No. 4. **Prof. W. R. Sorley.** 'The Problem of Decadence.' [Biological analogies apt to mislead. Intelligence and deliberate purpose more powerful in determining the destiny of States than of nations not organised politically.] **Barbara Freire-Marreco.** 'Authority in Uncivilised Society.' **Prof. J. S. Mackenzie.** 'Recent Contributions to the Study of Socialism.' [A consideration of H. G. Wells' *New Worlds for Old*, and Brougham Villiers' *Socialist Movement in England*. What is wanted is an earnest attempt to distinguish what can be advantageously undertaken by the State from what is best left to the enterprise of the individual.] **Prof. Geddes.** 'Chelsea, Past and Possible.' **S. K. Ratcliffe.** 'Aspects of the Social Movement in India.' Discussions: The Indeterminate Sentence. Reviews, etc. With this number the first volume of this important review is completed.

Revue de Philosophie. 1er Septembre, 1908. **Mgr. Le Roy.** 'Among the Primitive Africans.' [Evidence of missionaries to the belief in the human soul, and in disembodied spirits, good and bad.] **S. Belmond.** 'The Existence of God according to Duns Scotus.' [The existence of God is not a truth known of itself; it is provable *a posteriori*, not *a priori*.] **F. Chovet.** 'The Reducibility of the Principles of Reason and Unity.' [That the Principle of Contradiction and all other Primary Axioms are reducible to the Principle of Identity. Thus "the whole problem of the origin of ideas is reduced to the acquisition of the sole idea of being, which is given us in the experience of our own existence".] **P. Duhem.** 'Absolute and Relative Movement.' [Opinions of Humanists and Averroists in the sixteenth century. Valla and Nifo.] **P. Rousselot.** 'The Intellectualism of St. Thomas.' [A thesis at the Sorbonne. "Intellectualism usually means the primacy of the conceptual and discursive reason, *ratio*. Very different seems to be the intellectualism of St. Thomas. Intelligence, *intellectus*, is the grasp of being by the spirit, the sense of the real." Query, may not this exaltation of Intuition above Discursive Reason go to bring St. Thomas into line with Newman?] 1er Octobre, 1908. **G. Fonsegrive.** 'Certitude and Truth.' [An historical presentation of the difficulties against certitude. The individual is not incompetent to judge of truth, but he is then only certain of it when his judgment is borne out by society. The only irrefragable certitude is socially recognised certitude. Certitude is inchoate in the individual, complete in the community.] **S. Belmond.** 'The Existence of God according to Duns Scotus.' [That there is a Being holding absolute primacy in the three orders of Efficiency, Finality and Eminence.] **E. Peillaube.** 'Organisation of Memory.' [Amnesia, Somnambulism.] **Bishop Le Roy.** 'Among the Primitive Africans.' [Evidence of missionaries to African belief that the soul survives death, but not for ever, unless it be the soul of a great man; that there are also other spirits, some tutelary, some evil or roguish, no chief evil spirit or Satan; that there is one Supreme God, bearing many names; this God is inaccessible to magic, nor is ever worshipped under the form of any image; He is neither adored nor blasphemed; observed instance of African horror of blasphemy.]

Revue Néo-Scolastique. Août, 1908. **C. Piat.** 'God as an Object of Experience.' [Some caution against the delusions incident to any claim to such experience.] **M. de Wulf.** 'The Movement of Philosophy in Belgium.' [Flemish mediæval thinkers.] **A. Gemelli.** 'The Biological Basis of Psychology.' ["The biological explanation of psychical facts is absolutely insufficient, because the biological method is in that case inadequate to the object of study."] **Dr. Haller.** 'An Attempt at

a Mathematical Demonstration of the Existence of God.' [The demonstration comes to this, that a thing which exists, but might not exist, cannot claim existence as part of its own proper being; therefore it has existence from some being outside itself, a being to whom existence is part of that being's proper self, *i.e.* God. It is the old argument from contingent to necessary being, put in a mathematical dress.]

Revue de Métaphysique et de Morale. 16e Année, No. 2, Mars, 1908. **V. Brochard.** 'Le Dieu de Spinoza.' [The conception of Spinoza's divinity must be large and comprehensive enough to embrace the God of the Ethics and of the Tractate. In spite of all its transformations and additions, it is a Jewish conception, that of Jehovah, which is the soul of his system.] **E. Meynial.** 'Du rôle de la logique dans la formation scientifique du droit.' [Important in the formation and construction of laws, logic must remain a process placed at the service of the moral and social ideas of a people the better to realise them.] **A. Job.** 'La méthode en chimie.' [Must take physics as an instrument and guide, and seek its application and model in biology.] Étude Critique: **H. Norero.** 'La philosophie de Wundt.' [Begins a long, careful and appreciative study of Wundt's system. The writer holds that in Wundt the intellectualist method is so pursued as to result in the overthrow of ancient intellectualism.] Discussions: **E. Borel.** 'Réponse à M. Bergson.' **G. le Bon.** 'Réponse à M. Bouasse.' Questions Pratiques: **F. Challaye.** 'Le syndicalisme réformiste.' Supplement, etc. No. 3, Mai, 1908. **E. Colonna d'Istria.** 'Bichat et la biologie contemporaine.' **J. Maldidier.** 'Les caractéristiques probables de l'image vraie.' [It is not the decreased intensity of the image that leads us to consider it as subjective. It is the admission of its subjectivity that leads us to regard, and finally to experience, it as feebler. And this admission is due to their dependence on our will. Author gives a statement and criticism of antecedent views.] **M. Winter.** 'Importance philosophique de la théorie des nombres.' [A plea for the importance of the higher arithmetic. Analysis of mathematical theories always leads to arithmetical problems.] Étude Critique: 'La philosophie de Wundt' (*Fin.*). Questions Pratiques: **J. Delvolvé.** 'Examen critique des conditions d'efficacité d'une doctrine morale éducative.' Supplément. No. 4, Juillet, 1908. **R. Berthelot.** 'Sur le Pragmatisme de Nietzsche.' [The ideal which Nietzsche suggests is the expression of a life in progress; whereas the importance attached to the idea of proof by those he opposed, their submission of their will to an objective truth, appeared to him to betray an enfeeblement of the vital instinct. Important study of the influences determining the thought of Nietzsche.] **L. Vialleton.** 'La loi biogénétique fondamentale de Haeckel.' [The biogenetic law in its strict sense must be rejected, since it does not admit of the reconstruction, by the study of ontogeny, of the real series of the ancestors of a species.] **J. Dagnan-Bouveret.** 'L'Aphasie et les localisations cérébrales.' [Appreciative of the work of M. Pierre Marie. He has shown that Aphasia is an *intellectual* disorder, indicated by a marked diminution of intellectual capacity in general. He has tried to establish that the third left frontal circumvolution does not play any special *rôle* in the function of language.] Discussions: **G. Milhaud.** 'La philosophie de Newton, par M. L. Bloch.' Questions Pratiques: **J. Delvolvé.** 'Conditions d'une doctrine morale educative' (*Suite*). Supplément. No. 5, Septembre, 1908. Consists of a series of studies of contemporary philosophical movements in countries outside of France, *viz.*: Germany, by **J. Benrubi**; Great Britain, by **J. S. Mackenzie**; United States, by **F. Thilly**; Italy, by **G. Amendola**;

Scandinavia, by **H. Höffding**; South America, by **F. G. Calderon.** Supplément.

KANT-STUDIEN. Bd. xiii., 3, August, 1908. **Oskar Ewald.** 'Die deutsche Philosophie im Jahre 1907.' [An English translation of this article has appeared in the *Philosophical Review*, July, 1908.] **August Stadler.** 'Die Frage als Prinzip des Erkennens und die "Einleitung" der Kritik der reinen Vernunft.' [A not very satisfactory attempt to state the fundamental problem of the Critique.] **Richard v. Schubert-Soldern.** 'Die grundfragen der Äesthetik unter kritischer Zugrundelegung von Kants *Kritik der Urteilskraft*.' [This series of articles is not devoted to the explanation of Kant's views in æsthetics, but while starting from them proceeds to their independent development. This first article treats of the subjectivity of the beautiful, of the universality of the æsthetic judgment, and, lastly, of the distinction between the beautiful on the one hand, and the good, the true and the pleasant on the other.] **August Messer.** 'Heinrich Gompez *Weltanschauungslehre*.' [A review of the first volume of the above work.] **Paul Menzer.** 'Die neu aufgefundenen Kantbriefe.' [Five letters of some little interest.] **Heinrich Romundt.** 'Vorschlag zu einer Änderung des Textes von Kants *Kritik der praktischen Vernunft*.' [Together with a negative criticism by B. Bairch and P. Natorp.] Rezensionen, etc.

ARCHIV FÜR SYSTEMATISCHE PHILOSOPHIE. Band xiv., Heft 2, 25 Mai. **Ludwig Stein.** 'Der Pragmatismus.'—II. [Investigates the history of the term "Pragmatism". The kernel of the whole problem, the primacy of will over thought. Pragmatism does not offer us a new *Weltanschauung*, but an old one with a fresh tone, timbre and manner. Pragmatism a continuation of English tradition. Its method is philosophically one of the oldest. It aims at the construction of science on the basis of a logic based on biology. The "power to work" is really an *a priori* principle imperfectly recognised. Utilitarian Logic, and Pragmatism as a method and as a genetic theory of truth is nothing else, must have at least one constant in a world of sheer variables. The contest between it and intellectualism is just the old one between mechanism and teleology. Whether it can this time be fought out to a finish or not, Pragmatism deserves to be welcomed as a great centripetal force in modern thought.] **Friedrich Sommer.** 'Die Grundzüge einer Sozialaristokratie.' [Zweites Stück.] **M. Tramer.** 'Stetigkeit der Geometrie und der Zahlen.' **Theodor Lessing.** 'Studien zur Wertaxiomatik' (Zweites Kapitel). [Considers certain ethical problems: the *privatio boni* of Augustine; the *ubi nihil vales, ibi nihil velis* of Geulincx; the *Kollision der Pflichten* of Fichte; the aberration of conscience; the modifications of values; *Wert und Wertwille*. Normative nature of moral laws, requiring a material sphere to regulate.] **Viktor Stern.** 'Der materialistische Dualismus.' [The world must be extended in space and time if our thinking is to be right. Matter is the only real existence; and besides the movement of matter there is the consciousness of this movement. Understanding under material matter and movement, then knowledge is immaterial, and we accept a Dualism.] Drittes Preisausschreiben der "Kantgesellschaft". Jahresbericht über sämtliche Erscheinungen auf dem Gebiete der systematischen Philosophie. Heft 3, 7 Septembre. **Ludwig Stein.** 'Das Problem der Geschichte.' [A discussion of historical categories and of historical prediction.] **Otto Janssen.** 'Gedanken über den empirischen Ursprung der Kausalität.' [Every theory that seeks the meaning of causality either in the nature

of the successive or from the concept of the correlate is met with difficulties. To the idea of change must be added the concept of force. The ideas of willing and the causal ground are of the same nature in origin, and probably connected with our sense of innervation. In the transition from subjective to objective causality, impulse is changed into the idea of force. Examination of psycho-physical parallelism.] **F. Lifschitz.** 'Zur Kritik des Relativismus: Aus einer Methodologie der Wissenschaften.' [Relativism really presupposes the possibility of Dogmatism and Apriorism.] **Albert Sichler.** 'Über falsche Interpretation des kritischen Realismus Wundts.' [Fortsetzung.] **Kristian B. R. Aars.** 'Der Hass und die Liebe.' [Hate and love not sensuous but spiritual feelings. They constitute egocentric morality, alongside of which objective morality develops.] **N. Losskij.** 'Thesen zur "Grundlegung des Intuitivismus".' **Georg Wendel.** 'Kritik einiger Grundbegriffe des transzendentalen Idealismus.' [A criticism of Kant's ethical and æsthetic theories.] Jahresbericht. **A. Zielenczyk.** 'Ein Abschnitt aus der polnischen Philosophie der Gegenwart.' Neueste Erscheinungen, etc.

VIERTELJAHRSSCHRIFT FÜR WISSENSCHAFTLICHE PHILOSOPHIE UND SOZIOLOGIE. Jahrgang xxxii. (Neue Folge vii.), Heft 1. **Heinrich Karl Schwarze.** 'Die Ethik Herbert Spencers. Eine kritische Studie.' [Long account of Spencer's Metaphysics, Epistemology and Ethics, followed by a detailed criticism.] **R. Hönigswald.** 'Zum Problem der philosophischen Skepsis.' [Discusses the problem in the light of the relations between Kant, Hume and the ancient Sceptics. Philosophical Criticism overcomes epistemological Scepticism by setting aside its problem, which is that of a knowledge of the Thing-in-Itself.] **Richard Müller-Freinfels.** 'Zur Theorie der ästhetischen Elementarerscheinungen.' [Discusses rhythm, harmony and the elementary forms of plastic art.] **Demetrius Gusti.** 'Die soziologischen Bestrebungen in der neueren Ethik.' [The ethico-literary movement full of the ideas of social evolution. Examination of attempts at establishing a sociological basis for Ethics. Necessity of making Sociology a subject of University study.] Besprechungen, etc. Jahrgang xxxii., Heft 2. **Richard Müller-Freinfels.** 'Zur Theorie der ästhetischen Elementarerscheinungen' (2 Artikel). **Franz Oppenheimer.** 'Moderne Geschichtsphilosophie.' [Discusses the attempts of Lamprecht and Breysig to enounce a satisfactory theory of history. Danger that with Lamprecht's theory one may manipulate the facts to suit it, illustrated from Schneider's work on the Ancient Egyptians. Account of the work of Brook-Adams. His economic premisses faulty; his distinction between imaginative and economic men and races as fundamentally different overlooks the influence of environment which might make of one the other.] Besprechungen. [Contains a notice of Mr. Schiller's *Studies in Humanism*.]

IX.—NOTES.

MIND ASSOCIATION.

The following is the full list of the officers and members of the Association :—

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THE THIRD INTERNATIONAL CONGRESS FOR PHILOSOPHY.

This Congress assembled at Heidelberg on the 31st August last and the meetings lasted until 5th September. The state of Baden and the town and the University of Heidelberg united in giving the members a very hearty welcome. The usual *fêtes* and excursions were held, and here among the kindly people of the South one could catch a glimpse of the Germany of the past, the Germany of the era of philosophical idealism, the disappearance of which is so much lamented by the publishers of metaphysical literature.

Great Britain and Ireland were but slenderly represented, contributing only some half-dozen to a total of a good 300 members; and the

honour of maintaining English as one of the four languages employed in discussion was left almost entirely to America. It is noteworthy that the scope of the Congress was narrowed by the almost complete absence of the experimental psychologists. At the same time some almost extraneous topics were included, as, *e.g.*, the problem of a universal language. M. Couturat was there to advocate his own improvements on the existing schemes. As to much of the work of the Congress, ranging, as the papers did, from contributions to symbolic logic, to investigations into minute points of history, it is impossible to generalise briefly. In many debates, however, the current of thought showed a strong tendency to set in one particular direction, namely, towards a discussion of Pragmatism. But however it may be with the leaders of thought abroad, among the mass of those interested in Philosophy on the Continent the consideration of this doctrine does not seem to be so far advanced as with us. Consequently there was very little that was novel in the discussions which resulted, though it was interesting to see reproduced once more all the familiar features of the early stages of the controversy—the lightheartedness of the innovators and the intolerant indignation of the older school. Probably the Congress would have been better able after those preliminary exercises to appreciate the exact significance of the paper with which Prof. Royce opened the first public discussion. Prof. Royce was willing to admit "that the empirical truth into which our sciences inquire, is relative to the observers, to their functions and to their individual needs; so that Instrumentalism and Relativism" (moments in the Pragmatist doctrine) "express a very important part of the nature of the truth that is knowable to man, concerning human life and concerning the physical world". Nevertheless there is, he maintains, a sphere within which *absolute* truth is found. This is the domain of "Pure Mathematics and Modern Exact Logic," the truths in which have, by the researches of Mr. Russell and others, been put into a position which cannot be defined in terms of any form of Relativism. But, says Prof. Royce, the fundamental relations which pure mathematics and exact logic discover are still "relations that determine the Form of our activities" and hence "may be called the Form of the Will itself". Thus he hopes to appease the partisans of voluntarism. At the Congress, however, Mr. Schiller, on behalf of the Pragmatists, repelled these overtures for peace and, in the fury of the conflict which immediately broke out again, little more was heard of them.

Much disappointment was felt by members when it became known that Professors Mach, Lipps and Bergson, the latter two of whom had agreed to read papers, were unable to attend. The meetings closed with a discussion on 'the conception of Law,' and we were indebted to our president, Prof. Windelband, for leading the debate. Next Congress will meet at Bologna in 1911. The fifth is due four years later—in 1915. Surely by that time some British university should be ready to open its doors to the philosophers.

G. R. T. Ross.